THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—20TH YEAR. SYDNEY, SATURDAY, FEBRUARY 11, 1933. No. 6.

Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES— PAGE.

An Address, by ALEX. P. MURPHY, M.C., M.B., Ch.M. .. 171
"Observations on the Treatment of Œsophageal Cancer", by GARNET HALLORAN, B.Sc., M.D., F.R.C.S., F.R.A.C.S. .. 173
"'Kinked Back' and 'Strained Muscles'", by ERIC POCKLEY, M.B., Ch.M. .. 179
"On the Distribution of Radon Seeds Around the Circumference of a Circle", by WM. H. LOVE, B.Sc., Ph.D. .. 180
"John White: Surgeon-General to the First Fleet", by DOUGLAS ANDERSON, M.B., B.S. .. 183

ANALYTICAL DEPARTMENT—

"Hepasol" .. 188

LEADING ARTICLES—

Sinusitis in Children .. 189

CURRENT COMMENT—

Osteitis Deformans .. 190
Diabetes .. 191

ABSTRACTS FROM CURRENT MEDICAL LITERATURE—

Medicine .. 192

BRITISH MEDICAL ASSOCIATION NEWS— PAGE.

Scientific .. 194
Annual Meeting .. 196
Nominations and Elections .. 204

CORRESPONDENCE—

Facial Paralysis Following Tick-Bite .. 204
The Future of Medicine as a Profession .. 205
The Prevalence of Malaria .. 205

PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—

Victoria .. 206

DIARY FOR THE MONTH .. 206

MEDICAL APPOINTMENTS .. 206

MEDICAL APPOINTMENTS VACANT, ETC. .. 206

MEDICAL APPOINTMENTS: IMPORTANT NOTICE 206

EDITORIAL NOTICES .. 206

An Address.[1]

By ALEX. P. MURPHY, M.C., M.B., Ch.M.,

Incoming President of the Queensland Branch of the British Medical Association.

IF you will look at the Articles of Association of the Queensland Branch you will find that the order of business at the annual meeting is set out therein, and that one of the items is "to receive an address from the incoming president if so arranged by the council". Now for many years, ever since I have been a member, custom has prevailed over rule, and the retiring president has delivered the address, more or less in the nature of a swan-song. During his term of office the past president, for reasons doubtless good, but best known to himself, decided that his successor should revert to the strict letter of the law; hence it appears that the duty devolves on me tonight of addressing to you some few remarks, if possible not altogether useless nor incongruous to the occasion, and more or less relevant to our various activities.

I must confess that I have been greatly exercised with regard to choice of a subject; scientific papers, reviews of the year's work, personal reminiscence have all in turn played their part. Three weeks ago I was still undecided, but have finally resolved to tender you an apology for departing from precedent in having no written address, and intend instead to offer you some thoughts on matters which have been exercising my mind for some considerable time. I hope to be able to maintain a logical sequence, and to command your interest.

Earlier in the year the past president stressed the advisability of establishing a medical school in Brisbane. More recently paragraphs in the Press, including a leading article, have appeared couched in the same vein. All this, combined with personal

[1] Delivered at the annual meeting of the Queensland Branch of the British Medical Association on December 9, 1932.

experience of a number of graduates of recent vintage, raises the question as to whether the existing medical schools are fulfilling their function, or whether they have become, to use a phrase already hackneyed, "temples devoted to the worship of the test tube". Now it may be taken that the first care of a medical school should be the production of practitioners reasonably well versed in the arts of clinical medicine and surgery, who, after serving a term in a hospital, can take their place in the community and render efficient service to that community in its illnesses and ailments, and not the turning out of a number of partially trained laboratory workers, the majority of whom are helpless to hazard a diagnosis without constant recourse to the aids of that laboratory in which they have been, so to speak, incubated and cultured. It seems that the paramount importance of clinical methods is not sufficiently stressed, while the perspective of the ancillary sciences is greatly distorted. I would ask you at once to disabuse your minds of any idea that it is my wish to belittle these same sciences: employed with a wise discretion they can be the best of servants, yielding a wealth of helpful information; but they are apt to assume the character of Frankenstein's monster, and to pass beyond the control of those who allot them too important a rôle. To my mind the use of the term "routine" as applied to these investigations should be discarded; there are only two procedures to which it is applicable, namely, the taking of a careful history, and the making of a thorough physical examination. An example: A patient was admitted to the ward of a public hospital, complaining of attacks of severe abdominal pain accompanied by vomiting. The resident medical officer, after taking a skeleton history in which detail such as relationship of pain to food was treated with lordly disdain, and conducting a hurried physical examination, proceeded to write requests for six investigations: barium meal, test meal, examination of the stools for occult blood, Graham's test, full blood count, the sixth I have forgotten, and then in the words of Gilbert "with the gratifying feeling that his duty had been done", he prepared to await the arrival of the results of these investigations, in the pious hope that the diagnosis would spring into light from one or more of them. Had he devoted the time spent in writing out the requests to further examination of the patient, he might have discovered that both knee and ankle reflexes were absent, that the pupils failed to react to light, and that various areas of disturbance of sensation were present, in short, the patient presented a classical example of a tabetic with gastric crises. I grant you that this is a flagrant example, but it is more or less typical of what is taking place to a lesser extent every day.

Diagnosis must still consist of ability to utilize data gathered in both clinical field and laboratory. The aid of others may have to be employed, but the final interpretation must rest on the shoulders of one man—the clinician. Complex methods, particularly those yielding two or three places of decimals, have an apparent accuracy which is very alluring, but which at the same time may be very misleading. This must be borne in mind lest we overlook the old fashioned and almost out of date method of actually examining the patient, and listening to the story of the symptoms as it unfolds under skilled inquiry.

There seems to have arisen a curious psychology, a delusion, if I may be allowed to coin a cumbrous phrase, of ancillary infallibility, under which both laity and profession seem to labour. After careful questioning and physical examination, conducted on more than one occasion, a certain opinion is arrived at. Either at the request of the patient, or arising out of a desire on the part of the doctor to obtain some confirmation of his opinion, some biochemical, radiological, or other investigation is undertaken. The result of this may seem to be at variance with the aforesaid opinion, whereupon almost invariably the patient, and far too frequently the doctor, show an indecent haste in abandoning the clinical diagnosis in favour of the machine-made one. How has this come about? Is it a remnant of atavism, an inherent love of the mysterious, or have our ancillary brethren really established a claim to be regarded as infallible? I would remind you that there is a malign spirit whose existence is admitted by all honest workers, but whose invocation is apt to be deprecated—the demon called "experimental error". Suppose that a minute leak has developed in the apparatus employed; suppose that some chemical change has taken place in the reagents; suppose that an arithmetical error has crept into the calculations; and lastly, suppose that the figure evolved is perfectly correct, but that the interpretation placed upon it is entirely wrong. J. B. S. Haldane, whose name is, or should be, known to you all, strikes a note of warning in respect to this in one of his essays. He states:

> Any competent biochemist should not err more than one per cent. in his estimation of the amount of calcium contained in 10 cubic centimetres of blood The procedure, however, is a difficult one, involving several hours' hard work, and competent biochemists are very rare.

Diagnosis, then, must rest on the commonsense interpretation of symptoms and signs. It has to be remembered that the former usually antedate the latter, and that disease may be present and productive of symptoms long before any available methods will disclose abnormality of structure or impairment of function.

Names are apt to loom large in retrospect, but the great clinicians of the past were masters of their art. There is hardly a sign or symptom of disease that they did not note, and set out with such meticulous accuracy that the diagnosis of most conditions today still rests on the fulfilment of the clinical criteria laid down by them; and this in spite of the fact that the biochemist, radiographer and their kin were as yet "unborn men in an age unborn".

My plea, therefore, is that clinical methods be once again given pride of place, and not too readily subjugated to figures evolved in a laboratory. At the same time I would ask that a wider view be taken in respect to treatment, that the patient be considered as a whole, and not merely as an example of a certain morbid process, and that a greater leavening of commonsense be mingled with science in our therapy, often to the great credit of the physician and the physical and financial relief of the patient.

Another matter has been very well dealt with in our journal of some two or three weeks ago by a correspondent writing under the heading of "The Future of Medicine as a Profession". He rightly points out that whereas our numbers are increasing year by year, the fields in which we must look to glean our income are being steadily contracted.

Now it has always been our pride and privilege to place at the disposal of those unable to pay for it the best existing medical advice and treatment, and this has been made available through the medium of the honorary system in operation at the public hospitals. Of recent times, however, various other institutions have sprung into being, the promoters of which have not been slow in availing themselves of the well-known altruism of medical men, and in persuading the latter to give their services in an honorary capacity. I have no wish to particularize, but to make myself clear must take an example, and I would instance the baby clinics. To these clinics all are allowed, nay urged, quite irrespective of their financial status, to bring their children and receive medical advice from men serving on an honorary basis. It is not my desire to dry up the wells of charity, but I would remind you that there are governments in different parts of the world pledged to a policy of socialisation, and in staffing these institutions and assisting them to function we may be unwittingly forging a spearhead for the thrust of nationalization. Should this blight ever fall on the land it will be a sorry day for our profession, but I believe a sorrier for the general public. Much more could be said on this subject, but having directed your attention to it I will rest content.

To my mind, however, the most vital thing of all is the position occupied by our profession in the eyes of the public today, and to obtain a clearer perspective of this it is necessary to cast our minds back some 2,400 years, to the time when the history of medicine seems to crystallize with Hippocrates at Cos; and it is a strange thing that in the contemporary writings there appears to be but little breeze of criticism ruffling the stream of praise. At first sight this is incredible in a medical community, but a little reflection shows that there is only one logical deduction to be drawn, and that is that the author of the famous "*Jusjurandum*" put his precept into practice. Hippocrates evolved for his disciples a code of ethical and moral conduct which has served as a model and an inspiration to physicians throughout successive centuries. I do not mean to infer that doctors have always been poured from the moulds in which saints were cast, in fact those of the Middle Ages seem to have been a distinctly unsavoury crew, but gradually a higher standard of conduct has been adopted by and expected of the profession, this, I believe, chiefly in the British Empire, and particularly since the birth of our Association. By hard work, self-sacrifice, sterling honesty, and adherence to the principles of the Hippocratic Oath the medical profession slowly gained a position in public esteem, held, and indeed claimed, by no other. Membership provided the *entrée* to any house, to any grade of society. It enabled the doctor to go unmolested where policemen walked in pairs; it made him the repository of confidences disclosed to none other and it caused his advice to be sought on almost every subject, not because he was adjudged a universal expert, but because that advice could be relied on to be honest and disinterested. Surely this was an honourable state, and one to be jealously guarded. Do we still hold this position today? I hold that we do not. Of recent years we have been made the butt of innuendo and sarcasm by people who formerly had scant ground for so doing. It behoves us to discover how this has come about, and to set our house in order once again. A wise man has said that "the ancients endeavoured to make an art of medicine and failed, while the moderns tried to make a trade of it and succeeded", and in this, I think, lies the explanation for our altered status. The introduction of modern business methods into medicine, conceived in shame and born in another country, is one factor.

I fear that my criticism has so far been of a destructive nature. What, then, is the remedy for the existing state of affairs in the world? In spite of the time and thought that have been given to the problem by some of the best brains in all countries, no sovereign panacea has so far been evolved. In some essays I read last year by an author whose name escapes me, there was a suggestion that the great want under which mankind at present labours is rest. In picturesque language this philosopher states "that the world should lay its vast head on the first convenient pillow and take an age-long nap. It has become distracted through a morbid activity, the only cure for which is an interval of sound repose." It may be that this would be a solution of our troubles, a method of purging our minds of false beliefs, of regenerating the race, of restoring in all classes of the community the simple perception of what is right and the whole-hearted desire to achieve it, both of which have long since been engulfed in the maelstrom of progress. Professor Osborne has shown us that progress carries a price; it would seem that often this price is too great to pay.

In conclusion, I would say that the point that I have endeavoured to make, and which I trust I have not laboured, is this: that if a man sets himself a sufficiently high standard and strives to achieve it, in the words of the Buddhist "he cannot fail to acquire merit, though he may not attain Nirvana".

OBSERVATIONS ON THE TREATMENT OF ŒSOPHAGEAL CANCER.[1]

By GARNET HALLORAN, B.Sc., M.D. (Sydney), F.R.C.S. (Edin.), F.R.A.C.S.,

Honorary Surgeon, Ear, Nose and Throat Department, Royal Prince Alfred Hospital, Sydney.

IN discussing before this meeting the point at which we have arrived in treatment of cancer of the gullet I am conscious of the immensity of the subject, which has to a large extent baffled the combined efforts of all branches of the medical profession. While the œsophagoscope may have lighted the way in our progress, we must never allow ourselves as a section

[1] Read at a meeting of the Section of Oto-Rhino-Laryngology of the New South Wales Branch of the British Medical Association on October 26, 1932.

to see the subject only from such a restricted and circumscribed point of view, illuminating though it may be. As this surgical specialty stands first and foremost on the solid foundation of our training in general surgery and pathology, so our very superstructure of specialism in this subject will totter if we do not build upon basic principles in the treatment of this disease. If it can be said that we "have stumbled along widely divergent therapeutic ways" we have done so in the good company of all branches of the profession. It is essential, however, that we should continue to meet on common ground and if collective constructive thought can devise new lines of treatment or evolve new portals of entry, if a feasible surgery of access or a technique satisfying Regaud's laws should be shown to be possible, then our interest will have been justified until such time as the research worker can enlighten us as to the ætiology of cancer.

That not a single instance of cure can be brought before you tonight from any source in spite of the focusing or "cross-fire" from every branch of the profession should still further justify critical examination of our methods.

A survey of the statistics for the year 1930 of the State of New South Wales[1] shows us the subject in its true perspective. Cancer of the œsophagus ranks third in order of frequency as the seat of cancer in males. One in every 200 deaths of males from all causes was due to œsophageal cancer, and this area was the seat of disease in one in every 20 cancer deaths in males.

As opposed to 61 males, there were only 14 females who died of this affection at the rate of one among every 650 female deaths. It ranks thirteenth on the list of cancer deaths in females, being, of course, overshadowed by cancer of the female organs. Though men are affected, as shown in these figures, four or five times as often as women, none of the males was affected under the age of forty. I have, however, seen post-cricoid cancer in a woman aged twenty-seven years and a patient with pericœsophageal cancer described in this paper was aged thirty-two years.

A survey of the records of eighty-four cases has been made by me, such cases being drawn from the Radium Clinic, Sydney, the Royal Prince Alfred Hospital and private sources, over a period of three and a half years from January 1, 1929, to June 30, 1932.

Of these, for the purposes of this discussion, I have selected only thirty cases in which, with one exception, I was personally conversant with the appearance at examination by direct œsophagoscopy.

Importance of Early Diagnosis.

We are firstly handicapped by the fact that practically all patients presenting themselves for treatment are already in an advanced stage of the disease.

Skiagram Figure III in the case of a woman, aged fifty-two years, seen two weeks ago, illustrates a typically advanced cancer. Yet the closest cross-examination of this woman elicited the fact that she noticed no symptoms referable to the digestive tract until six weeks previously.

The average patient no doubt can think of symptoms ranging from indigestion to hæmatemesis for from three to eighteen months; but the fact remains that quite a large group do not do so.

It is not wise to regard cancer of this region as "a local process of a relatively low degree of malignancy". I have no figures of its capacity for forming distant metastases; but the fact that the average patient lives only 5·3 months after intubation, or 3·6 months after gastrostomy,[2] no doubt masks the true extent of such metastases during life, and from observation in recent years the evidence points to more early and frequent metastases than was formerly thought.

But how is the demand for earlier diagnosis to be satisfied? With regard to the larynx[1] Chevalier Jackson laid down the dictum that every adult patient with persistent hoarseness should be considered as cancerous until proven otherwise, and this is a matter that is easily impressed on the medical profession and public alike, nor does a laryngoscopic examination deter them. Its analogy in œsophageal cancer is logical; but in view of the advanced stage of such cancers before any symptoms occur, as shown in skiagram Figure III, I would go further and suggest that all patients over the age of forty, with persistent symptoms of one month referable to the upper digestive tract, should be examined for this disease; moreover, such patients should be examined by direct œsophagoscopy as well as by X rays if their condition is to be diagnosed before œsophageal obstruction is manifest in the skiagram. Only by focusing the mind of the medical profession on its early responsibilities in this matter can we secondarily hope to enlighten the lay mind.

Data Gained from Œsophagoscopy.

In a meeting of this section of œsophagoscopists there is no need to detail the technique of œsophagoscopy, nor the appearances found at examination; but stress should be laid on the importance of three things, namely, (i) biopsy snipping for pathological report, (ii) degree of permeability or otherwise, (iii) exact site of the stricture, for on these data one is able to name the tumour and gauge its radiosensitivity or resistance. Impermeable strictures are beyond the aid of intubation, and access cannot be gained to their lower borders. Certain sites will not tolerate retention of foreign bodies such as radium tubes or intubation tubes.

Under direct vision unusual features may be recognized, namely, malignancy superimposed on achalasia, or malignancy coincident with a syphilitic lesion or stricture as a pressure phenomenon from the adnexa.

I would mention a sign which I have come to regard as important and diagnostic of œsophago-bronchial fistula; it is this. In a lightly anæsthetized patient, as the fine rubber wired probe enters such a fistula, often otherwise undetected because of extensive ulceration or normal skiagram, a peculiar characteristic sigh may be heard, indicating that the probe is

[1] The total number of deaths from laryngeal cancer in New South Wales for 1930 was 24. The total number of deaths from œsophageal cancer in New South Wales for 1930 was 75.

ILLUSTRATIONS TO THE ARTICLE BY DR. GARNET HALLORAN.

FIGURE IA.
Annular cancer. Patient unable to swallow fluids.

FIGURE IB.
Same patient as Figure IA, showing stricture intubated for eleven months.

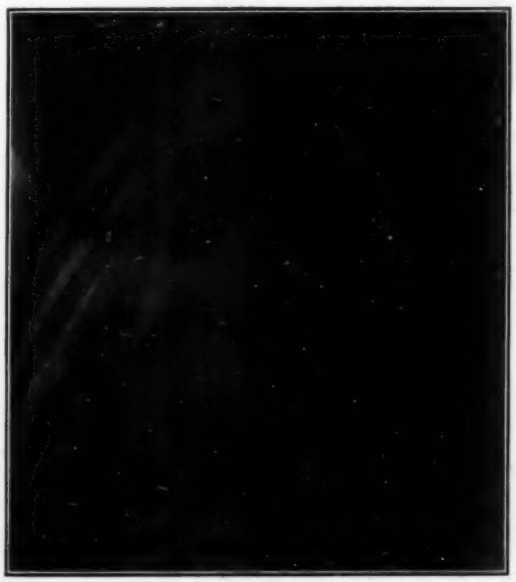


FIGURE IIA.
Typical carcinoma. Patient unable to swallow fluids.

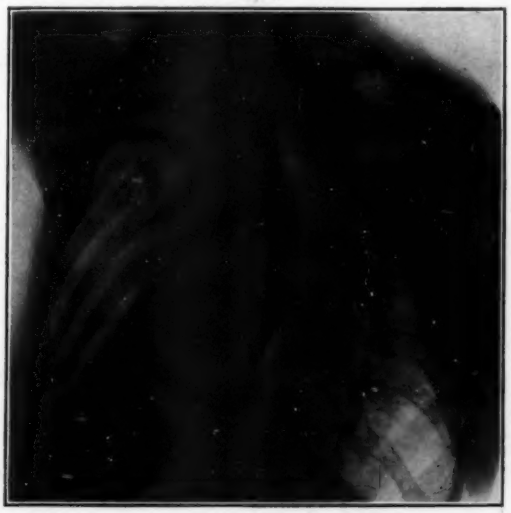


FIGURE IIB.
Same patient as Figure IIA, showing barium passing freely through tube after thirteen months.

ILLUSTRATIONS TO THE ARTICLE BY DR. GARNET HALLORAN.

FIGURE III.
Advanced carcinoma with history of only six weeks referable to digestive tract.

FIGURE V.
Intubation of carcinoma at cardiac orifice. Barium demonstrating patency.

FIGURE IV.
Radium needle chain inserted within œsophageal stricture by direct œsophagoscopy. Protracted fractional method, avoiding gastrostomy.

FIGURE VI.
Temporary intubation of upper simple stricture, permitting ultimate attack on lower stricture.

in the respiratory tract. I am not advocating such a purposeful procedure, but if an already established fistula guides the hidden fine bougie held in a gentle hand away from the œsophageal lumen, the characteristic "sigh" should be at once regarded as indicative of a fistula.

The Wassermann test should always be carried out.

X Ray Appearances.

In advanced cases with obstruction skiagraphic differentiation is obvious, as illustrated in the accompanying plates of carcinoma, cardiospasm, œsophageal pouch and cicatricial stenosis. In the earlier stages, however, even before obstruction and when there may be only slight X ray evidence, or when one disease is superimposed on the other, the data gained by direct œsophagoscopy and the biopsy report will dispel all doubt.

The accompanying table of typical cases drawn from the Radium Clinic shows our usual plan of investigation, and on the information so tabulated, based primarily on location, biopsy report, permeability and blood reaction, a systematic campaign of treatment can be discussed.

Treatment.

As previously mentioned I am unable to point to any case of cure, and in discussion would stipulate that any such claim should be accompanied by a biopsy report of the tumour.

In almost all cases in my experience the tumour was already in an advanced stage on œsophagoscopic examination, even though the general condition had not deteriorated to any great extent. Such patients are hardly suited for anything but palliative treatment, namely, intubation or gastrostomy.

It would appear to be generally accepted that excision of the tumour is impracticable, while the hopes held out for radium and X ray therapy have not borne fruit up to the present.

It is not the purpose of this paper to deal with operative procedures from without, of which there is an extensive, if dismal, literature. Detailed descriptions are available of the technique for removing the whole œsophagus when its middle part is involved, but there still remains the problem of restoring the œsophagus.[3]

Hedblom's case of combined transpleural and transperitoneal resection of the thoracic œsophagus and cardia is shown you[4] on the epidiascope.

Guisez,[5] after a survey of the literature from Billroth in 1872 to Thoreck's classical case in 1919, despairs of success by surgical excision, and turns to radium. Stanford Cade in 1929 stated:

> Operative mortality of surgical removal of carcinoma of the œsophagus is, I believe, still 100 per cent. Transpleural approach of the œsophagus as practised by Tudor Edwards is the best surgery of access available up till now.

Souttar, in an admirable survey of the subject, concludes that carcinoma of the œsophagus "neither is nor ever can be amenable to direct surgical attack, except in cases so rare as to be of no practical importance".[2]

One can only express the hope that in spite of such discouraging results the thoracic surgeon may still evolve a technique which will triumph over the present maze of apparently insurmountable obstacles.

Radium Therapy.

In radium therapy, which should be regarded as on its trial, factors peculiar to its application in this disease, are: (i) The difficulties of access, whether from the intra- or extra-œsophageal route; (ii) the poor resistance of the patient with advanced cancer; (iii) frequent impermeability of the stricture; (iv) the difficulty of complying with Régaud's principle of equal irradiation of all parts of the tumour, especially the base; (v) the fact that we are dealing with a septic cavity often foul and ulcerated proximal and adherent to vital structures.

In a series of typical cases taken from a group investigated by the Radium Clinic Unit, Sydney, the technique after Janeway[6] was employed in all but the last, in which access was gained by thoracotomy. In this series the increasing dosage in milligramme hours is noticed. The fact that the patient W.P. is still alive with biopsy report of squamous epithelioma forty months after combined treatment is worthy of comment. A gastrostomy having been performed, an endless thread was established after the fashion of Guisez's "*fil sans fin*" method and the radium element was thus drawn up into the œsophageal growth.

Accurate apposition is essential, and this was verified as far as was possible, either by the fluoro-

Table Showing Details of Typical Cases of Œsophageal Cancer.

Patients and Date.	Sex and Age.	Operation.	Location.	Biopsy Report.	Permeable.	Result of Wassermann Test.	Remarks.	X Ray Report.
F.B. 11/2/1929	M. 71	Œsophagoscopy.	Post cricoid.	Squamous epithelioma.	No.	No reaction.	Aortic aneurysm. Paralysis of the vocal cord. Marked enlargement of both lobes of the thyroid. Died.	Malignant stricture.
G.H. 19/8/1929	M. 73	Œsophagoscopy.	Cardiac orifice.	Not stated.	Yes.	"+++"	Did not resemble cancer, more fibrous.	Malignant stricture.
J.B. 4/3/1930	M. 46	Œsophagoscopy.	Angle of Ludwig.	Squamous epithelioma.	Yes.	"+++"	Novarsenobenzol given; radium and X rays applied.	Malignant stricture.
C.B. 18/12/1931	M. 68	Œsophagoscopy.	Sixth thoracic vertebra.	Squamous epithelioma.	No.	"+++"		Malignant stricture.
W.B. 24/11/1930	M. 65	Œsophagoscopy.	Three inches above cardiac orifice.	Squamous epithelioma.	Yes.	No reaction.	Ulcerated.	Malignant stricture.
C.W. 11/4/1932	M. 62	Œsophagoscopy. Cauliflower ulcer.	Cardiac orifice.	Squamous epithelioma.	?	?	Gastrostomy; now requests intubation.	Malignant stricture.

scopic screen at the time of operation or by subsequent skiagrams, and in some cases the post-radiation appearances were viewed by direct œsophagoscopy later. In some cases biopsy snippings were taken.

Radium Series.

E.A.D., a male, aged fifty years, was admitted with a carcinoma 7·5 centimetres (three inches) below the *introitus œsophagi*. On October 12, 1928, three five-milligramme radium needles, end to end in rubber tubing, were drawn up into the œsophageal lumen and left for forty hours. The total dosage was 600 milligramme hours. The screen was one-half millimetre platinum. On March 28, 1929, examination by direct œsophagoscopy revealed almost complete obstruction by a ragged mass 7·5 centimetres (three inches) below the introitus. Eight days later he was discharged as being in a hopeless condition.

W.P., a male, aged fifty-seven years, was admitted with carcinoma located in the middle third of the œsophagus. On June 12, 1929, a radium chain was drawn into the lesion consisting of two twenty-five-milligramme needles and one ten-milligramme. They were left for twenty hours, making a total dosage of 1,200 milligramme hours, with one millimetre platinum screening. From October 10, 1929, to March 21, 1930, Röntgen irradiation was applied in eight doses to 3,100 Röntgen units. On May 5, 1930, as he resented using the gastrostomy tube, the œsophagus was intubated. On August 24, 1931, after increasing dysphagia for three months, œsophagoscopy revealed an impermeable stricture without granulations or ulceration. The œsophageal tube was displaced fifteen months after insertion. On September 15, 1931, he was discharged in a hopeless condition and unrelieved. On October 24, 1932, his condition was hopeless, forty months after first application.

M. de P., a male, aged sixty-two years, with carcinoma located at the level of the sternal end of the third rib, had radium application on October 10, 1928, consisting of three ten-milligramme needles end to end for three days in one millimetre of platinum; the total dosage was 2,160 milligramme hours. Distance radium was also applied to the chest wall on December 19, 1928. On March 1, 1929, œsophagoscopy showed the stricture to be impermeable. He was discharged much worse on March 23, 1929, and died on a date unknown.

H.M., a male, was aged sixty-one years. The following dosage was applied on April 17, 1930: One fifty-milligramme tube was left *in situ* for forty-eight hours, giving a total dosage of 2,400 hours in one millimetre of platinum screen. Repeated X ray therapy was given up to November 6, 1930, but he was discharged unrelieved, and died in December, 1930.

W.J.P., a male, aged fifty-seven years, was admitted with carcinoma at the cardiac end of the œsophagus. On April 24, 1929, gastrostomy was performed, and on June 30, 1929, a series of four artificial pneumothoraces was commenced. Thoracotomy for access to the tumour was carried out on July 3, 1929, the radium needle chain in rubber tubing being laid along the tumour. On July 6, 1929, there was evidence of cardiac fibrillation. He died a month later. The dosage in this case was doubtful, but is believed to be fifty milligrammes for ninety-six hours, totalling 4,800 milligramme hours.

Whether equal irradiation of a tumour is possible by these methods is very doubtful. Obviously the mucosal surface dosage must be very different from that of the outer base, say two centimetres or more away. If the dosage is heavy, it may kill healthy mucosa as well, with resultant radionecrosis and perforation, and the radio reaction renders swallowing impossible. Whereas cell caustic effects are to be avoided, a radium reaction referred to as a *radio-epithelitis fibrinosa* should be induced, and this reaction can be seen and controlled by direct œsophagoscopy.

The endless thread method is therefore falling from favour, and there is noticeable a desire to alter the time factor and to avoid a gastrostomy.

Zwerg,[11] after a warning as to the poor results to be expected by the endless thread method, advises the use of sixty to seventy milligrammes of radium in fractional doses, namely, a first application of four and a half to seven hours, a second after two weeks, and a third after four or five weeks with a one-half millimetre brass filter. Guisez avoids a gastrostomy altogether and employs his protracted fractional method. The radium element embedded in the end of a sound is passed through the œsophagoscope. The needle chain contains 13·3 milligrammes in the centre and 6·6 milligrammes at each end, and not only engages in the stricture, but protrudes beyond the tumour 0·5 to 1·0 centimetre at each end (see Figure IV).

The treatment extends over ten to fourteen days, during which he places the sound in the stricture for two to six hours every one or two days. The dose per centimetre can be up to one millicurie destroyed. If the dose exceeds this there is danger of radium necrosis.

Thoracotomy.

Clemensen and Woodman report that out of five patients four died and only one out of two patients at the Zurich Surgical Clinic improved; both died after seven and three and a half months.

Combined Röntgen and Radium Treatment.

Zuppinger[12] combines both Röntgen and radium therapy, using first the Röntgen therapy, followed one to two months later by radium applied by the protracted fractional method of Guisez through the œsophagoscope, as above described. Such a method would seem to comply with Regaud's principle of equal irradiation to all parts of the tumour, especially the base, and avoids a gastrostomy.

Interstitial Insertion of Radon Seeds.

Bearing in mind such almost insurmountable difficulties, one is driven to hope for better results from the interstitial insertion of radon seeds by direct œsophagoscopy.

Here again the tumour must be permeable, and after dilatation by one of the various methods a special seed introducer, which passes the seeds outwards at an angle, can be used to implant the seeds in the tumour, starting from below the stricture and working upwards to the top after the methods described by Muir[10] in 1927 and by Hyman Teperson[7] in 1932, who used special œsophagoscopes.

Simply to insert seeds into the proximal aspect of the tumour would be valueless. Teperson states that:

> The required total irradiation is determined by estimating the cubic capacity of the tumour and its relative radio-sensitivity as obtained from a histologic study of a section of the tumour. Approximately 130 millicurie-hours of radiation per cubic centimetre of tumour tissue are usually required to effect a destruction of the malignant cells.[7]

The seeds used are one millicurie of radon, his total dose being 2,500 millicuries in a case quoted. He concludes by expressing the opinion that this method conforms to the principle of Regaud, "for we have radon implants piercing the thickness of the tumour at intervals of one centimetre in the horizontal and vertical planes, thus securing an equalized radiation and a cross-fire effect over a long period of time". In addition, each patient received a course of Röntgen therapy *et cetera*. How the cubic capacity of the tumour is estimated

is not stated. The lower border, however, can be outlined by a retrograde opaque meal[9] when not otherwise defined.

Now, it would seem that in incipient carcinoma such a radon technique should give reasonable results, but those accustomed to the appearance of carcinoma in the usual advanced stage presented to us will realize that there is no guide as to the outward extension of the lesion, and such extension will probably be beyond the sphere of influence of such implants.

If the efficacy of radon be granted, however, and there are some who doubt this, such interstitial implantation would seem preferable to less scientific methods. It needs no gastrostomy and should not unduly devitalize the patient.

Röntgen Radiation Therapy.

Röntgen radiation therapy has also been disappointing in this disease. Whether the results obtained in more recent years with newer technique are better than those formerly obtained is a matter on which only specialists in such forms of therapy can enlighten us, and I should like to hear their views.

Out of a series of forty patients so treated and reported on in 1926 by Shreiner, Esthelman and Kress,[8] "the length of life after admission varied in time from a few days to eleven months, with one exception, who lived one year and four months", which suggests that the course of the growth was not influenced by radiation therapy.

E.E., a female, aged thirty-two, complained of œsophageal obstruction on August 20, 1931, with cough and loss of weight for one month. Œsophagoscopic examination revealed a concentric obstruction (permeable) 28·75 centimetres (eleven and a half inches) from the upper teeth. It was not ulcerated and appeared to be more on her left side, and was not suitable for biopsy. It was regarded as of pericesophageal origin. From September 16, 1931, to October 2, 1931, she was submitted to X ray treatment of this tumour, but by December 11, 1931, she again complained of dysphagia. I have recently been informed that she died a few months later. An examination of her previous history revealed that a mesenteric tumour (lymphosarcoma) had been discovered during laparotomy on May 27, 1929. After X ray therapy to this region she had improved, putting on weight and eating well; there were no signs of growth until her increasing œsophageal obstruction on August 20, 1931.

M.S., a male, aged fifty-six, on January 5, 1931, was examined by direct œsophagoscopy, which revealed a concentric non-ulcerated tumour 7·5 centimetres (three inches) below the suprasternal notch. The biopsy report was carcinoma. From January 14, 1931, to February 6, 1931, eight doses of deep X ray therapy totalling 3,500 Röntgen units were given through four ports of entry. The patient did not improve, and on June 2, 1931, there was complete obstruction for liquids. He also complained of much coughing and increasing sputum from April, 1931. On June 7, 1931, he died of pneumonia secondary to œsophago-tracheal fistula.

Electro-Coagulation of Tumour.[10]

In the following case electro-coagulation of the tumour was used.

E.W., a female, aged fifty-five years, was admitted for investigation of œsophageal tumour. Direct œsophagoscopy revealed a tumour 27·5 centimetres (eleven inches) below the upper teeth; the tumour was permeable. The biopsy report was squamous epithelioma. On June 17, 1929, electrocoagulation after the method of Wright was carried out. On June 20, 1929, gastrostomy was performed. Another examination by direct œsophagoscopy on June 24, 1929, revealed a tumour 10 centimetres (four inches) long. The lower half showed whiter than the upper half, suggesting a diathermic slough. Further examination on August 12, 1929, revealed that the growth was very foul and hæmorrhagic. The general condition was worse. No further notes are available.

A second patient died one month after diathermy. This palliative method has not found favour. As the outer boundaries of the growth are unknown, it is safe to coagulate only the known proliferating area, and a varying area of active tumour must remain.

The coagulating metal ring or electrode is placed below the growth and works from below upwards. It is therefore not visible, nor the whitening of the tissues under control of vision. I cannot see that it has any advantage over intubation in restoring the patency of the canal. On the contrary, there is a degree of swelling and local reaction which may necessitate a preliminary gastrostomy. A direct view of the slough *in situ* in proximity to pulsating aorta and other anatomical structures, such as the vagus and respiratory tract, will probably lead you to discard this method in favour of intubation for all cases to which diathermy is applicable, for they are, *ipso facto*, permeable.

Palliative Methods.

Until such time as curative methods can be evolved we are forced to fall back upon palliative methods to prevent death from starvation. Of these, intubation is the method of choice, and gastrostomy, which so long held pride of place, is reserved only for those patients in whom intubation is impracticable.

If gastrostomy is the only choice, it should be performed soon after a diagnosis has been established, while the patient's general condition is still good; it should not be left until the later stages.

An examination of the tables shows that in late gastrostomies death supervenes in a large number shortly after operation, the patient being unable to withstand the operation in his devitalized condition.

There are many objections to gastrostomy. A patient is unable to take his meals at table, but has to retire elsewhere; in a social sense it isolates him from his friends and so to the existent disease there are superadded the repeated psychical traumata, which must continue till the end of his days. Far better that he eats and drinks *per vias naturales*, "taking his glass like a man", as one patient in this series described it.

The management of a patient who has been subjected to gastrostomy is cumbersome, and should the abdominal skin become inflamed to any extent, his life is unenviable.

Œsophageal Intubation.

The present day methods of œsophageal intubation have apparently been evolving since the eighties. Prominent in the literature are the names of Krishaber, Croft, Symonds, Hill, Lynah and Guisez, until in recent years the methods of Souttar, of London, and Myerson,[13] of New York, were described. The former devised a tube of spiral wound German silver wire, and the latter a tube of solid German silver.

Reference to the literature can be made for details of their technique, and the apparatus shown tonight is that of Souttar. The œsophagoscopes are bulky and are necessarily bulky in order that the ten

millimetre intubation tubes may be inserted under direct vision.

The unusual beak on the instrument, although resented at first by the surgeon, is later appreciated, since it gives a wider exposure of the upper shelf of the stricture and holds the œsophageal mucosa out of harm's way during later instrumentation.

In approaching the *introitus œsophagi* the beak will find its way thereto and enter the more easily if the patient's head is more acutely flexed on the chest than is usual in œsophagoscopy.

The stricture must be permeable, a fine rubber tipped guide wire being used to insure this; but when the stricture is seemingly impermeable by this method, the swallowing of the weighted silk thread may be tried. The stricture is then dilated up slowly to the larger or smaller size of intubation tube, namely, ten or six millimetres respectively, and the tube is inserted well down in the stricture.

Should dilatation proceed beyond the six millimetre bougie, but the ten millimetre size not be attainable, then the six millimetre wire tube is inserted, and as a result of the gradual dilatation thereafter it can later be removed and an attempt can be made to insert the larger ten millimetre tube.

Removal of a tube presents no difficulty, the procedure being the same as for any other foreign body, but more simple in that the tube is readily accessible and easily grasped.

The cervical œsophagus does not tolerate the tube well and in cancer of this situation gastrostomy is preferable. Cancer of the cardiac orifice may also present difficulties and a degree of intolerance. The series of five intubation cases presented is small, but serves to illustrate the type of case in which intubation is indicated, as well as its pitfalls and the necessity for close observation by one accustomed to œsophagoscopy.

It is not to be imagined that only five of the total thirty cases from which tonight's details are drawn were suitable for intubation. On the contrary, at least half were suitable for intubation, and of the remainder only in those with cervical œsophageal cancer and in those characterized by cachexia or in the terminal stage would intubation be contra-indicated.

In an analysis of a series of clinical cases it is obvious that many patients are in the terminal stage of their disease and beyond any palliative aid. Coincident tertiary syphilis is not uncommon. Gastrostomy may have been performed already and the unhappy patient may then request intubation, as in two of the cases in this series.

Such preliminary gastrostomy is not to be regarded as a contraindication to intubation. It is advisable to use intubation during the early stages of obstruction before the general condition has deteriorated.

The following are the histories of patients in whom intubation was used.

CASE I.—W.P., a male, aged seventy-seven years, was found on admission to hospital to have a permeable stricture 37·5 centimetres (fifteen inches) below the upper teeth. He could not swallow water on admission. On July 17, 1929, the stricture was dilated and intubated with a full sized Souttar's tube. Thereafter he was nourished freely *per os* till death eleven months later. He was fed on milk foods, egg foods, mince, potato, and cut up vegetables. Some degree of interscapular pain was noticed during subsequent months. He gained one stone in weight in six weeks. The tube was never at any time obstructed. In June, 1930, he died of secondary asthenia. See Figures IA and IB.

CASE II.—R.W.S., a male, aged fifty-seven years, had a cauliflower growth located at the lower end of the œsophagus. On July 27, 1931, he complained of much pre-operative pain, but after intubation stated that he had no pain at all. He took fish and mince without difficulty. On July 29, 1931, the X ray report was that the tube was probably proximal to the lesion, and not actually within the malignant area. The patient was not under my observation at this time and died elsewhere on September 9, 1931, possibly from malnutrition.

It is obvious from the X ray report that, as in Case V, the tube should have been immediately replaced by direct œsophagoscopy.

CASE III.—R.C., a male, aged sixty-two years, had a carcinoma situated at the junction of the lower and middle thirds of the œsophagus. After intubation of the œsophagus he stated that he could eat much better than before inbutation. On November 2, 1931, the tube was removed; no reason for its removal was given in the notes. On November 6, 1931, gastrostomy was performed. On January 7, 1932, he developed paralysis of the left vocal cord and died on February 10, 1932. No post-operative X ray notes are available as a control. Had the tube slipped up as in the last two cases?

CASE IV.—W.P., a male, aged fifty-seven years, had a carcinoma located in the middle third of the œsophagus. He underwent a preliminary gastrostomy on April 5, 1929, followed by "retrograde" radium being drawn up into the tumour on June 12, 1929. (See details under Radium Cases.) On May 5, 1930, a Souttar's tube was placed in the œsophagus. Fifteen months later, on August 5, 1930, he had severe dysphagia. For the last three months he had been unable to swallow and had reverted to the use of the gastrostomy tube, and was losing weight. Œsophagoscopy revealed an impermeable stricture at the previous site which was unfit for further intubation. No ulceration or granulation was present. X ray examination of the abdominal tract on August 13, 1931, revealed that the metal tube had slipped down to the bowel, and it was later passed *per rectum*. He was discharged "hopeless" on September 15, 1931. On October 26, 1932, he was alive, but his condition was desperate. As in the last two cases the tube had become displaced.

CASE V.—L.F., a female, aged fifty-two years, was shown to have a stricture at the level of the seventh to the eighth thoracic vertebræ. There was a biopsy report of squamous epithelioma. On admission to hospital on January 4, 1932, she could not swallow liquids, and the smaller Souttar's tube was inserted into the stricture. There was a recurrence of the dysphagia three weeks later, and at œsophagoscopy examination a piece of bacon was removed from the tube. Three months later there was again recurrence of dysphagia. She could take liquids only and skiagrams revealed that the tube had slipped down through the stricture to the small bowel. The tube later passed *per rectum*. On May 23, 1932, a small tube was reinserted into the stricture, but a month later this tube was blocked by a piece of steak. The small tube was then removed, the stricture further dilated, and the larger full sized tube inserted. On October 7, 1932, her total obstruction was due to slight displacement of the tube upwards. This tube was removed and once more the smaller tube was reinserted. The stricture was tough and ulcerated, but dilatable, and the larger sized tube will be reinserted later. On October 24, 1932, this patient was gaining weight and was without pain. The barium bolus passed freely through the tube (see Figures IIA and IIB). Her general condition is good, she is bright and happy, and was presented to you this evening, some ten months after intubation.[1]

Conclusions Drawn from Intubation Series.—The following conclusions may be drawn from the intubation series. Patient number I, who lived eleven months after intubation without further obstruction, was the only one of this series requiring no further attention to the tube, and therein gives a

[1] On February 4, 1933, thirteen months after intubation, this patient's condition is unchanged.

false impression. Cases II and III illustrate the necessity of a follow-up system by the œsophagoscopist so that an insidious displacement of a tube may be immediately recognized, and the same or a larger tube should be replaced in the stricture.

Cases IV and V again illustrate the liability of the tube to become displaced and to pass *per rectum* without trouble. Patient number V is now gaining weight and is presented to you this evening after ten months' intubation as a result of the lessons learned in the previous cases, namely, that after intubation a close follow-up system should be established between patient and œsophagoscopist.

On any recurrence of pain or obstruction the tube is localized both by X ray examination and œsophagoscopy and replaced if necessary. The patency of the intubated stricture is demonstrated by the fluoroscopic screen, as shown in Figure IIB. A skiagram showing barium outside the tube may indicate a filling defect of the lower part of the œsophagus and demand replacement.

Relief from pain and a much happier mental outlook are the outstanding features after intubation, being in marked contrast with the unhappy existence of the patient with a gastrostomy. That the follow-up system after intubation is liable to be more exacting on the surgeon is beside the point, and I would go so far as to say that unless such a follow-up can be prearranged, a gastrostomy life were better than the insidious inanition coincident with the unrecognized displacement of an œsophageal tube.

REFERENCES.

(1) Statistical Register, Part VI, State of New South Wales, 1930.
(2) H. S. Souttar: "Treatment of Carcinoma of the Œsophagus: Based on 100 Personal Cases and Eighteen Post Mortem Reports", *The British Journal of Surgery*, Volume XV, July, 1927, page 76.
(3) G. Grey Turner: "Some Experiences in the Surgery of the Œsophagus", *The British Medical Journal*, July 30, 1932, page 212; *New England Journal of Medicine*, October, 1931.
(4) Carl A. Hedblom: "Combined Transpleural and Transperitoneal Resection of the Thoracic Œsophagus and the Cardia for Carcinoma", *Surgery, Gynecology and Obstetrics*, Volume XXXV, September, 1922, page 284.
(5) J. Guisez: "*Du cancer de l'œsophage*", *Bulletin d'Oto-Rhino-Laryngologie*, March, 1925.
(6) B. F. Schreiner, K. F. Eschelman and L. C. Kress: "Radiation Therapy in Cancer of the Esophagus, Based on a Study of 63 Cases", *Journal of Cancer Research*, Volume X, 1926, page 208.
(7) H. I. Peperson: "Treatment of Carcinoma of the Esophagus with Radon Implants", *The American Journal of Roentgenology and Radium Therapy*, Volume XXVIII, August, 1932, page 229.
(8) L. Ledoux and Sluys: "*Technique de localisation des cancers de l'œsophage*", *Journal de Radiologie et d'Electrologie*, Volume VII, 1923, page 549.
(9) A. J. Wright and G. Hadfield: "Carcinoma of the Œsophagus: Treatment by Diathermy", *The British Journal of Surgery*, Volume XV, July, 1927, page 71.
(10) J. Muir: "Radium Implantation in Œsophageal Cancer: Technique of Application", *The Laryngoscope*, Volume XXXVII, 1927, page 660.
(11) H. G. Zwerg: "*Der derzeitige Stand der Radiumchirurgie*", *Strahlentherapie*, Volume XXXVIII, November, 1930, page 487.
(12) A. Zuppinger: "*Richtlinien zur Behandlung der Œsophaguskarzinome*," *Strahlentherapie*, Volume XLI, July, 1931, page 543.
(13) M. C. Myerson: "The Management of Carcinoma of the Esophagus", *Surgery, Gynecology and Obstetrics*, Volume XLIII, 1926, page 690.

"KINKED BACK" AND "STRAINED MUSCLES".

By ERIC POCKLEY M.B. Ch.M.,
Sydney.

THE remedy I have found almost immediately effective for what is variously known as a kink in the back, ricked back, acute and chronic lumbago (apart from actual joint lesions, vertebral displacements *et cetera*) is to exercise the back, performing especially the movement which causes the most pain. This will cure most cases in two days, whereas under the treatment of rest usually advised the patient is lucky if he is able to get about comfortably in a week or a fortnight.

I do not know whether there has been any recent explanation of the pathology, but as far as I know it is controversial. The condition comes on especially in people who have been doing a lot of stooping, gardening *et cetera*, and it seems to me the explanation is the fact that under such conditions the *erector spinæ* and other muscles for arching the back are in constant action (to prevent one falling forwards) but never in full contraction, and that probably such full contraction is necessary to get rid of the waste products of metabolism properly, and to keep the muscles in good tone. On the above theory (and as I used to be rather subject to the condition, and had had very little result either with myself or with patients, from the rest treatment) I first tried the experiment on myself about twenty years ago, with such excellent results that I have advised it ever since, with equally satisfactory results with any sufferer who can be induced to "face the music".

As I have seen it put in a lay publication on physical culture, one good squeeze of a dirty sponge is better than a dozen half squeezes, and I think it is quite possible that this may be a crude explanation and phrasing of an actual physiological truth. It is possible that this may also be partly the explanation of severe cramps in various over-fatigued muscles, that is, an effort on the part of the muscles, by full contraction, to get rid of the waste products of metabolism, in much the same way that shivering is said to be an effort on the part of the muscles to produce more heat. In both cases there is an immediate result, unpleasant to the entire individual as regards sensation, but of ultimate benefit as regards his physiology. Such an explanation seems to me to stress the fact that our tissues know more than we give them credit for, and is in accord with the idea brought forward by some, that our knowledge and awareness are not confined to the brain alone, but that the body tissues also are concerned. In the same way I think that in every function and activity of the body, every single cell plays its part. Considering the factors of evolution, I cannot see how it can possibly be otherwise. The marvels of our physiology and psychology are far too complex and unfathomable to be divided into separate individual compartments. As some poet or sage says, quoted in this journal a little time back, you cannot move a speck of dust a fraction of an inch without affecting the sun. Anyhow, these back troubles can be very disabling. Regarding the exercise in these cases of "ricked back", the one I find especially beneficial is simply to bend backwards repeatedly as far as possible, or better still, stand with back to the wall, about a yard from it, bend back with hands above the head till you can put them on the wall or grasp a post, and then "climb downwards" and forcibly arch the back by forcing the hips forwards. The increase of dorsiflexion obtained in this way, beyond that acquired by the first mentioned simple back bending, is not entirely obtained by the dorsiflexing muscles; but for all that they also are enabled to contract further still, and it is therefore beneficial. Forward bending (to obtain full relaxation alternately with full

contraction), side bending, and rotation, though all to the good here, are not essential except in cases of strained side *et cetera*, when one of these movements may be the one causing the most discomfort, and therefore would be the most beneficial.

On the occasion when I first tried this exercising I was in the late Dr. Critchley Hinder's house. There were very heavy windows right down to the floor in place of doors leading to the balcony where I temporarily lay across a bed to read a letter. On starting to arise I got a "kink" in the small of the back, pain so severe, with that absolutely "gone" feeling, that it took me over ten minutes to be able to stand. After a short spell I started the bending back business, of necessity very gradually at first, and, I must admit, almost more than I could manage. Within an hour (after two periods of ten minutes each of the exercising) I was able to stoop and raise the heavy window with no more trouble than a good deal of soreness. Next day there was a certain amount of soreness and weakness preventing me walking very freely, but this was practically gone by the evening, after several more spells of exercising, and the following morning no trouble whatever in jumping or twisting in any direction.

The result is equally good and permanent, though not so rapid (possibly a few days) in cases of chronic lumbago. Slower, because often for months the patient has been going about in a somewhat bent position, and all this time the erector muscles have been in nothing approaching full contraction.

In acute cases many will tell you the pain is too severe, that they cannot even stand straight, let alone bend back; but it is simply a matter of making up your mind to it. If the patients with acute pain cannot face it, let them wait till next day, when, with a little determination, they probably can.

Some while ago I saw in the paper that a well-known young golfer was suffering from a strained back, and found it necessary to rest, and a week or so before that, that he had been spending hours on the putting green (a semi-erect position) and thought that probably one was the cause of the other, and that exercise as above would have put him all right in a day.

The pathology of many of these and similar disabilities is hard to fathom. In tennis elbow, apparently exercise is not good, and rest seems necessary, but here many claim that there are signs of an actual synovitis. In the so-called snapping of the plantaris, I think probably there is no such lesion at all. One medical friend of mine who had the trouble in each leg, within a short time afterwards had wasting of one of the bellies of the gastrocnemius (the inner, if my recollection is right) in each leg. The suddenness of the pain, and the after result, perhaps indicate nerve ending damage, and remind one of the blow-out of a fuse in an electric circuit.

I remember another occasion when I developed a "strain" with very acute pain in the pectoralis region (apparently in the *pectoralis major* muscle) after strenuous tennis, and had to play another round next day. As rest overnight had made no improvement, in fact, the contrary, and it was a case of improve or forfeit the game, I repeatedly went through the movement causing the most pain (in this case pronating the extended arm and forcibly reaching towards the opposite hip) several times during the morning, and by mid-day was practically right again, apart from slight soreness which did not cause any trouble at all in play. I have cured myself equally rapidly of a "strained muscle" on a couple of occasions since then by similar treatment.

On another occasion I developed a teno-synovitis above the ankle, with definite friction palpable, but I did not allow this to incapacitate me, and it got right in a day in spite of, or more probably on account of, constant strenuous use.

I think if ever I had a "snapped plantaris" I would try the same kind of treatment, namely, immediate and repeated exercise.

One is repeatedly seeing reported that such and such a sportsman is suffering from a strained shoulder, leg, side *et cetera*, and that the doctor has ordered a week's rest lest it become chronic or permanently disabling. He need not worry. It won't. He can order the exercise advised, and let him continue his sport without fear of the consequences. Formerly, following what I was taught, I would have given the same advice of rest, but I know better now.

In most of these cases of "strained muscle" the muscle concerned is in fairly constant action, but not full contraction.

There is one other type of "strain" where a period of one day's rest does do good, and that is where the full contraction, otherwise beneficial, is overdone, for example, in the muscles of the calf in repeatedly rising to the full limit on the toes as in serving in tennis, jumping *et cetera*. Here the discomfort increases day by day, as opposed to the other cases, and may become actually disabling at the time; but even here one may have no fear of permanent disablement, and a spell of one day is usually sufficient to permit further repetition of the movement without further trouble.

To return just once more to cases of "kinked back", I can insure freedom from it by doing a few back-bending exercises each morning. If I neglect this, I run a risk of it, and in fact got a fairly severe one three weeks ago on this account. I was with a friend who told me he had had it six months previously, and that with rest and diathermy he got right in a week. I assured him I would be right in two days by exercise, which proved correct. I often meet sufferers from it who tell me their doctor has ordered rest, massage *et cetera*, with the usual tardy recovery. Massage, heat, diet *et cetera* are all to the good, but such statements show that the benefit of full contraction of the muscles concerned in such cases and in cases of "muscle strain" is not generally known. In these cases there are no objective signs, and you only have the patient's statement as to whether the discomfort is persisting or increasing. From very careful observations on myself and on others whose statements I knew were above suspicion, I would go so far as to say that if a patient sustaining a "muscle strain" treated it as above, he would be able to continue using it without pain severe enough to incapacitate him, and that any statement to the contrary was influenced by some other reason than the alleged crippling.

ON THE DISTRIBUTION OF RADON SEEDS AROUND THE CIRCUMFERENCE OF A CIRCLE.[1]

By WM. H. LOVE, B.Sc., Ph.D.,
Department of Cancer Research, University of Sydney.

IN this paper a determination is made of the distribution of radiation intensity in the vicinity of radon seeds when placed around the circumference

[1] This work was carried out under the control of the Cancer Research Committee of the University of Sydney and with the aid of the Cancer Research and Treatment Fund.

of a circle. The fundamental considerations relating to the significance of scattering *et cetera* in this class of problem have been presented in a previous communication.(1)

General Solution.

Suppose we have n radon seeds (A, B, C *et cetera*) equally spaced around the circumference of a circle of radius a (Figure I) and let P be any point in the plane of the circle.

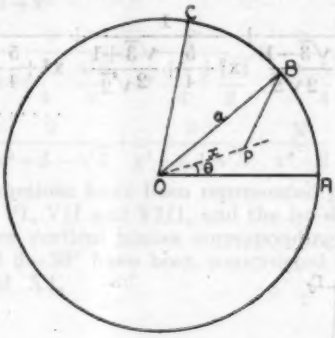


FIGURE I.

If ρ=the activity of the seeds in millicuries per unit length,
dl=the length of the seeds,
x=the distance of P from the centre of the circle,
and θ=the angle between OP and the radius vector OA,
the intensity[1] at P, due to the seed at B, is

$$\frac{\rho dl}{a^2+x^2-2ax\ \cos\left(\frac{2\pi}{n}-\theta\right)}$$

and the intensity at P due to all the seeds is given by the formula

$$I_P=\rho dl \sum_{r=1}^{n} \frac{1}{a^2+x^2-2ax\ \cos\left(\frac{2r\pi}{n}-\theta\right)}$$

$$=\rho dl \frac{n}{x^2-a^2}\ \frac{x^{2n}-a^{2n}}{x^{2n}-2a^nx^n\ \cos n\theta+a^{2n}} \quad \ldots\ldots(1)$$

Particular Application of General Solution.

If this formula is applied to the particular problem in which six seeds, each containing one millicurie of radon, are equally distributed around the circumference of a circle of unit radius (Figure II), we have

$$\rho dl=1$$
$$a=1$$
$$n=6$$

and the formula becomes

$$I_P=\frac{6}{x^2-1}\ \frac{x^{12}-1}{x^{12}-2x^6\ \cos 6\theta+1} \quad \ldots\ldots(2)$$

It is now convenient to consider the three cases in which θ=0°, θ=15°, and θ=30°. The intensity at the point P will be represented by $I_{0°}$, $I_{15°}$ and $I_{30°}$ respectively according as θ=0°, θ=15° and θ=30°.

[1] Unit intensity is that intensity at one centimetre distance from a point source of one millicurie of radon or one milligramme of radium.

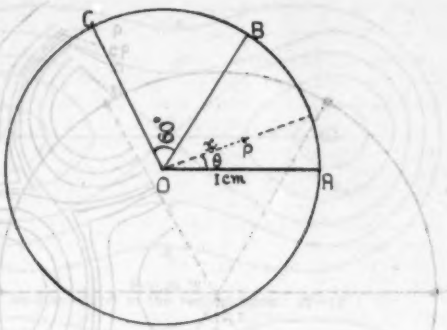


FIGURE II.

When θ=0° the relation (2) reduces to

$$I_{0°}=\frac{6}{x^2-1}\cdot\frac{x^6+1}{x^6-1} \quad \ldots\ldots(3)$$

When θ=15° the relation (2) reduces to

$$I_{15°}=\frac{6}{x^2-1}\cdot\frac{x^{12}-1}{x^{12}+1} \quad \ldots\ldots(4)$$

and when θ=30° the relation (2) reduces to

$$I_{30°}=\frac{6}{x^2-1}\cdot\frac{x^6-1}{x^6+1} \quad \ldots\ldots(5)$$

These three functions have been graphically represented in Figure III.

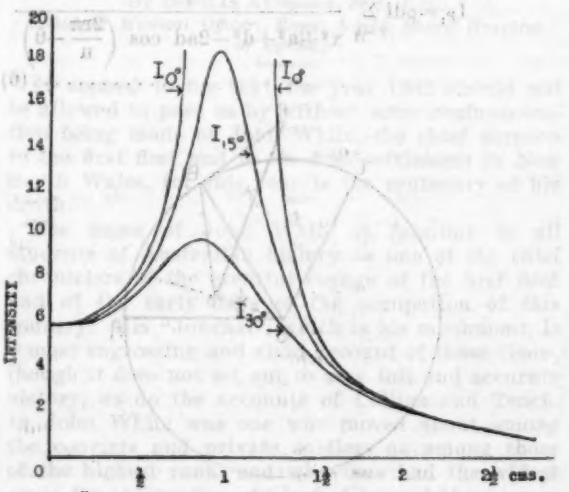


FIGURE III.

The Iso-Dose Curves in the Plane of the Circle.

The iso-dose curves in the plane of the circle can be constructed from the relations (3) to (5). They are shown in Figure IV.

The Radiation Intensity at any Point in a Vertical Plane Through the Centre.

Consider a point P_1 (Figure V), whose vertical distance above the point P is x. If the distance of

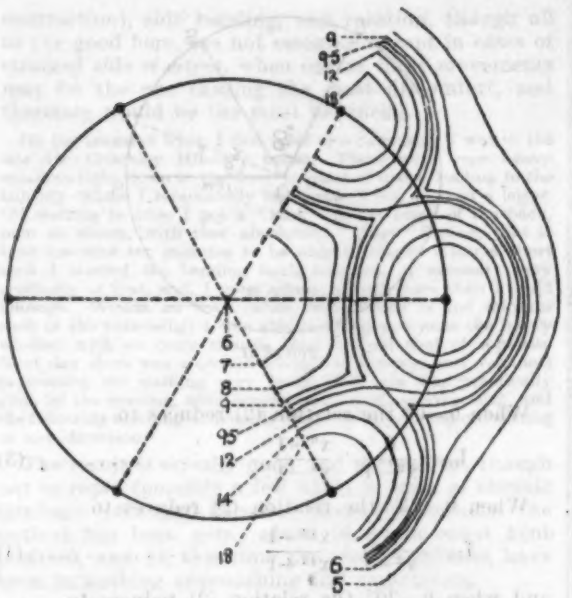


FIGURE IV.

The iso-dose curves in the plane of the circle.

P from the centre of the circle is d, then the intensity at P_1 is given by the relation

$$I_{P_1}=\rho dl \sum_{r=1}^{n} \frac{1}{x^2+a^2+d^2-2ad\ \cos\left(\frac{2r\pi}{n}-\theta\right)} \quad \ldots\ldots\ldots\ldots(6)$$

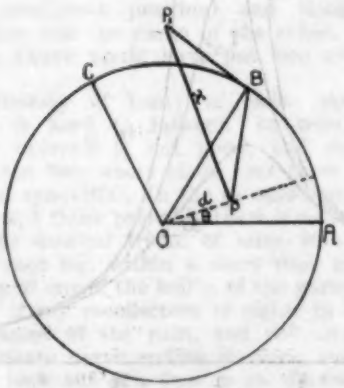


FIGURE V.

If we apply this result to the special case previously considered, and if the intensity at P_1 for particular values of θ and d be represented by I^{θ}_{θ}, then we obtain the relations

$$I^{0}_{0^\circ}=\frac{6}{1+x^2} \quad \ldots\ldots\ldots\ldots(7)$$

$$I^{\frac{1}{2}}_{0^\circ}=\frac{2}{x^2+\frac{3}{4}}+\frac{2}{x^2+\frac{7}{4}}+\frac{1}{x^2+\frac{1}{4}}+\frac{1}{x^2+\frac{9}{4}} \quad \ldots\ldots\ldots\ldots(8)$$

$$I^{1}_{0^\circ}=\frac{2}{x^2+1}+\frac{2}{x^2+3}+\frac{1}{x^2+4}+\frac{1}{x^2} \quad \ldots\ldots\ldots\ldots(9)$$

$$I^{0}_{15^\circ}=\frac{6}{1+x^2} \quad \ldots\ldots\ldots\ldots(10)$$

$$I^{\frac{1}{2}}_{15^\circ}=\frac{1}{x^2+\frac{5}{4}-\frac{1}{\sqrt{2}}}+\frac{1}{x^2+\frac{5}{4}+\frac{1}{\sqrt{2}}}+\frac{1}{x^2+\frac{5}{4}+\frac{\sqrt{3}-1}{2\sqrt{2}}}+\frac{1}{x^2+\frac{5}{4}-\frac{\sqrt{3}-1}{2\sqrt{2}}}+\frac{1}{x^2+\frac{5}{4}+\frac{\sqrt{3}+1}{2\sqrt{2}}}+\frac{1}{x^2+\frac{5}{4}-\frac{\sqrt{3}+1}{2\sqrt{2}}} \quad \ldots\ldots\ldots\ldots(11)$$

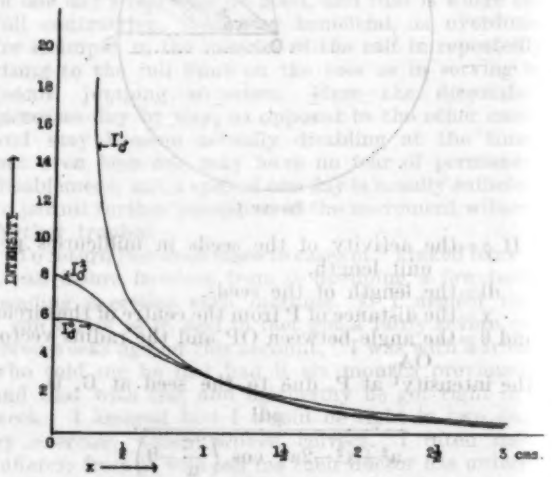


FIGURE VI.

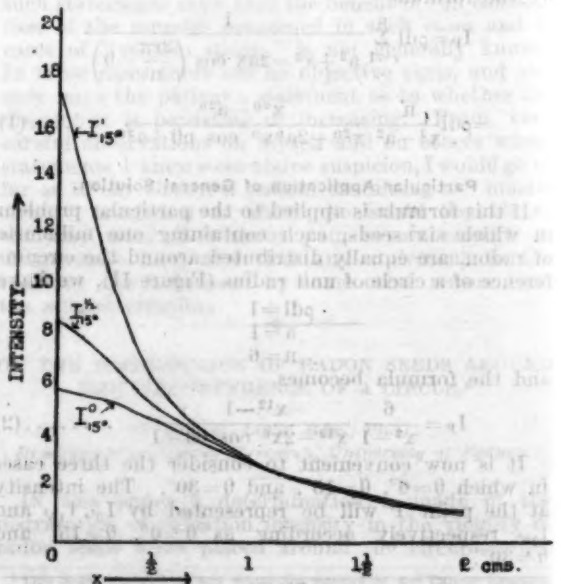


FIGURE VII.

$$I^{1}_{15^\circ}=\frac{1}{x^2+2-\frac{2}{\sqrt{2}}}+\frac{1}{x^2+2+\frac{2}{\sqrt{2}}}+\frac{1}{x^2+2+\frac{\sqrt{3}-1}{\sqrt{2}}}+\frac{1}{x^2+2-\frac{\sqrt{3}-1}{\sqrt{2}}}+\frac{1}{x^2+2+\frac{\sqrt{3}+1}{\sqrt{2}}}+\frac{1}{x^2+2-\frac{\sqrt{3}+1}{\sqrt{2}}} \quad \ldots\ldots\ldots\ldots(12)$$

$$I^{0}_{30^\circ}=\frac{6}{1+x^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(13)$$

$$I^{1}_{30^\circ}=\frac{2}{x^2+\frac{5}{4}-\frac{\sqrt{3}}{2}}+\frac{2}{x^2+\frac{5}{4}+\frac{\sqrt{3}}{2}}+\frac{2}{x^2+\frac{5}{4}} \quad \ldots\ldots(14)$$

$$I^{1}_{30^\circ}=\frac{2}{x^2+2-\sqrt{3}}+\frac{2}{x^2+2+\sqrt{3}}+\frac{2}{x^2+2} \quad \ldots\ldots(15)$$

These functions have been represented graphically in Figures VI, VII and VIII, and the iso-dose curves in the three vertical planes corresponding to $\theta=0°$, $\theta=15°$ and $\theta=30°$ have been constructed in Figures IX, X, and XI.

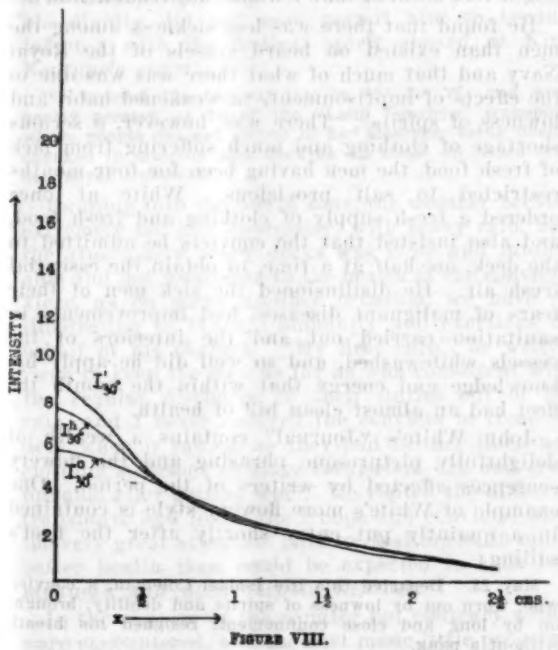


FIGURE VIII.

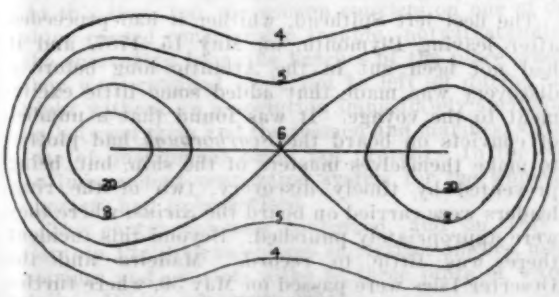


FIGURE IX.
The iso-dose curves in the vertical plane. ($\theta=0°$.)

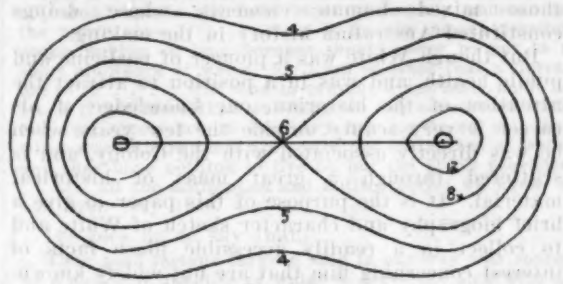


FIGURE X.
The iso-dose curves in the vertical plane. ($\theta=15°$.)

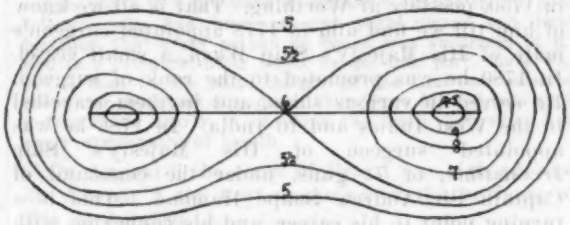


FIGURE XI.
The iso-dose curves in the vertical plane. ($\theta=30°$.)

Reference.

(1) Wm. H. Love: "On the Distribution of Radiation Intensity Around Different Forms of Radium Applicators", THE MEDICAL JOURNAL OF AUSTRALIA, November 10, 1932, page 624.

JOHN WHITE: SURGEON-GENERAL TO THE FIRST FLEET.[1]

By DOUGLAS ANDERSON, M.B., B.S.,
Resident Medical Officer, Royal North Shore Hospital of Sydney.

IT seemed to me that the year 1932 should not be allowed to pass us by without some commemoration being made of John White, the chief surgeon to the first fleet and to the first settlement in New South Wales, for this year is the centenary of his death.

The name of John White is familiar to all students of Australian history as one of the chief chroniclers of the eventful voyage of the first fleet and of the early days of the occupation of this country. His "Journal", which is his monument, is a most engrossing and vivid account of those times, though it does not set out to be a full and accurate history, as do the accounts of Collins and Tench. In John White was one who moved about among the convicts and private soldiers as among those of the highest rank, and who thus had the widest scope for observation; he looked beyond the narrow compass of his official duties and wrote intimately in his journal when he felt disposed. He was a man of parts, and the "Journal" is rendered intensely interesting, not only by the light which the writer throws upon contemporary events, but by his definite opinions, by the account of Australian flora and fauna, and, above all, by its power to translate the reader to the atmosphere of the first settlement and to bring him face to face with

[1] Abridged from a paper read at a meeting of the Section of Medical History and Literature of the New South Wales Branch of the British Medical Association on November 10, 1932.

those mixed human elements whose doings constituted Australian history in the making.

But though White was a pioneer of medicine and public health, and was in a position to attract the attention of the historian, our knowledge of his career is very scanty outside the few years when he was directly associated with the Colony, and is scattered through a great mass of historical material. It is the purpose of this paper to give a brief biography and character sketch of White and to collect in a readily accessible place facts of interest concerning him that are not widely known.

John White is said to have been born in Sussex in 1750, possibly at Worthing. That is all we know of him till we find him in 1778 appointed surgeon's mate of His Majesty's Ship *Wasp*, a small vessel. In 1780 he was promoted to the rank of surgeon. He served in various ships, and in them travelled to the West Indies and to India. In 1786 he was appointed surgeon of His Majesty's Ship *Irresistible*, of 74 guns, under the command of Captain Sir Andrew Snape Hamond. This is a turning point in his career, and his connexion with New South Wales began shortly afterwards. Sir A. S. Hamond, now Under-Secretary to the Navy, wrote on October 16, 1786, to Mr. Nepean, Under-Secretary at the Home Office, in the following terms:

> Mr. White, the surgeon of the "Irresistible" is a candidate for Botany Bay. He is a young man of much credit in his profession and of that sort of disposition and temper that render him a very proper person for such an establishment. If no surgeon is yet appointed, and you will do me the favour to recommend him to Lord Sydney, I shall think myself much obliged to you, and shall consider myself bound to the Government for his good behaviour.

These good offices were quick to bear results, and on October 24, 1786, John White was appointed Surgeon-General to the Settlement of New South Wales at a salary of £182 10s. *per annum*.

In March of the next year he joined the fleet of transports as it lay at anchor in Plymouth, and immediately commenced his "Journal", which he carried on for more than a year. During that period the hazardous voyage to New South Wales was successfully accomplished and the settlement definitely established. Early in 1790 the diary, to which was added a good deal of matter descriptive of his collection in the field of natural history, was published by subscription in England. It is a handsome quarto volume, and bears on the first page a small engraving from a drawing by White (quite well done) and the title:

> Journal
> of a
> Voyage to new South Wales
> with Sixty-five plates of
> Non-descript Animals, Birds, Lizards,
> Serpents, curious cones of trees and other
> Natural Productions
> By JOHN WHITE, Esqre.,
> Surgeon-General to the Settlement.
>
> LONDON:
> Printed for J. Debrett, Piccadilly.
> MDCCXC.

There were over seven hundred subscribers to the work. A French translation was published.

The first entry in the "Journal" is dated March 16, 1787. Having arrived on his ship to take up his duties, White lost no time in displaying humanity and efficiency as well as "that disposition and temper" that rendered him "a man of much credit in his profession". The fleet, with its human freight of 756 convicts, had been lying in port some time, and the confinement and inactivity had already begun to tell upon the convicts. The minor ailments that broke out below decks were the cause of very great misery; furthermore, the temporary surgeon had told the various sufferers that they were afflicted with malignant diseases and that no power could save them from a speedy death, and this information had an even profounder effect than the actual maladies. White was quick to take in the true state of affairs; he relates that he gave his predecessor a vigorous dressing-down, cowed his blusterings, and told him "that when any disease rendered it necessary to call in medical aid he might rest assured that I would not trouble him".

He found that there was less sickness among the men than existed on board vessels of the Royal Navy and that much of what there was was due to the effects of imprisonment, "a weakened habit and lowness of spirits". There was, however, a serious shortage of clothing and much suffering from lack of fresh food, the men having been for four months restricted to salt provisions. White at once ordered a fresh supply of clothing and fresh food, and also insisted that the convicts be admitted to the deck, one-half at a time, to obtain the essential fresh air. He disillusioned the sick men of their fears of malignant diseases, had improvements in sanitation carried out and the interiors of the vessels whitewashed, and so well did he apply his knowledge and energy that within the month the fleet had an almost clean bill of health.

John White's "Journal" contains a wealth of delightfully picturesque phrasing and the flowery sentences affected by writers of the period. One example of White's more flowery style is contained in a quaintly put entry shortly after the fleet's sailing:

> May 28. Departed this life Ismael Coleman, a convict, who, worn out by lowness of spirits and debility, brought on by long and close confinement, resigned his breath without a pang.

The fleet left Spithead, whither it had proceeded after leaving Plymouth, on May 15, 1787, and it had not been out in the Atlantic long before a discovery was made that added some little excitement to the voyage. It was found that a number of convicts on board the *Scarborough* had plotted to make themselves masters of the ship, but, being prevented by timely discovery, two of the ringleaders were carried on board the *Sirius*, where they were appropriately punished. Beyond this incident there was little to record. Madeira and the Deserter Isles were passed on May 30, where turtles were seen swimming in the water, and on June 3

the fleet arrived in Teneriffe and anchored in Santa Cruz Road.

The fleet remained a week at Teneriffe, during which White found time to explore the island and observe its inhabitants. The common people, he soon discovered, "had a strong spice of furacity in them" and were "the most importunate beggars in the world". He also records that "the itch was so common among them and had attained such a degree of virulence that one would almost be led to believe that it was *epidemic* there"—a heavy medical pleasantry, but the only jest that White permits himself in the entire diary. The city of Laguna, the capital of Teneriffe, possessed at the time of White's visit "three hospitals, two of which were originally instituted for the wise but ineffectual purpose of eradicating the *lues venerea*, a disease that has long been and still continues to be very common in this island".

Leaving Teneriffe, the fleet was quickly in the tropics. The usual ceremonies took place on the occasion of "crossing the line", but from White's brief and prosy entry of June 14 we gather that his dignity did not even permit him to become infected with the festival spirit aboard at King Neptune's court:

> We crossed the tropical line in 18° 20′ W., and were nearly pressed on board the "Lady Penrhyn" transport, whose people did not attend to her steerage, being deeply engaged in sluicing and ducking all those on board who had never crossed it.

Running into the torrid zone, the weather became extremely hot and oppressive, with heavy rain, and the atmosphere below decks was close and intolerable and not conducive to the health of the convicts. Here, as on many another occasion, we have an illustration of White's humanity and exertions on behalf of his charges. "My first care", he writes, "was to keep the men as far as was consistent with the regular discharge of their duties out of the rain, and I never suffered the convicts to come on deck when it rained, as they had neither linen nor clothing sufficient to make themselves dry and comfortable after getting wet". He visited the different transports and found the troops and convicts, from the very great attention paid to cleanliness, in much better health than could be expected in such low latitudes and unfavourable weather.

In the vicinity of the equator hot contrary winds were encountered, and the fleet made little progress. At this time, too, the women convicts on one of the ships caused considerable trouble; notwithstanding the enervating heat, the hatches of the place where they were confined could not be left off during the night without an association immediately springing up between them and the seamen and marines, which fear of punishment could not prevent. In the end an independent ventilation system for the women's quarters had to be devised.

The contrary winds continued, and on July 6 Captain Phillip was obliged to restrict officers, men, marines and convicts alike to three pints of water daily. White comments that:

> This is a quantity scarcely sufficient to supply that waste of animal spirits the body must necessarily undergo in the torrid zone. . . . Were it by any means possible people subject to long voyages should never be put to a short allowance of water; for I am satisfied that a liberal use of it . . . . will tend to prevent a scorbutic habit as much if not more than anything we are acquainted with. My own experience in the navy has convinced me, that when scorbutic patients are restrained in the use of water and they have nothing to live on but the ship's provision . . . all the antiseptics and antiscorbutics we know of will avail very little.

He goes on to say that:

> When good fortune threw a ship in our way who spared us a sufficient quantity of water to serve the sick with as much as they could use, this fortunate and very seasonable supply made in a few days so sudden a change in the poor fellows, who had been covered with ulcers and livid blotches, that every person on board was surprised at it: and in a fortnight after when we got into port, there was not a man in the ship, though at the time we received the water the gums of some of them were formed into such a fungus as nearly to envelope the teeth, but what had every appearance of health.

On August 2 the coast of Brazil was sighted, and on August 7 the fleet anchored in the harbour of Rio de Janeiro.

A marine who passed a spurious quarter-dollar here was sentenced to two hundred lashes. With regard to floggings, though White must often have been present to minister to the victims, never once does he describe a flogging or make any comment on this form of punishment. This seems rather surprising.

The fleet stayed four weeks at Rio de Janeiro, where they were treated with the greatest hospitality, and White's "Journal" contains a long and interesting account of the Portuguese settlement and the people.

He writes:

> While we remained here, I attended Mr. H de Fonso, Surgeon-General to the army, and a man of ingenuities and abilities in his profession; . . . I prevailed on him as he was about to amputate a limb, to allow me to take it off according to Allenson's method. During the operation I could plainly see, that he and his pupils did not seem much pleased with it; and he afterwards told me that it was impossible that it could ever answer. A very short space of time, however, made them of a different opinion; and in eighteen days after, when we sailed, I had the satisfaction to leave the patient with his stump nearly cicatrized, to the no small joy of the surgeon, who said that if the man had died he would have been heavily censured for making him the subject of experiments. The circumstance of a man's leg being cut off, and almost healed in as many days as it generally takes weeks soon became known . . . . and whenever I visited the hospital afterwards the objects of pity with which it was filled used to crowd around me in such a manner and in such numbers for my advice that I found it difficult to get from them. And they now would readily have submitted to any operation I should have proposed; but as I saw the surgeon did not much approve of my interference, I gave up all ideas of it.

On September 4 the fleet weighed for the Cape of Good Hope. The voyage to the Cape was uneventful, and occupied over five weeks. There was an early addition to the ship's company. We have the entry:

> September 8. In the evening between the hours of 3 and 4, Mary Broad, a convict, was delivered of a fine girl.

One day "we caught a shark six feet long, of which the people made a good mess". One imagines that the "good mess" was served with the right sauce.

The fleet arrived in Table Bay on October 13 and stayed a month, during which time White resided on shore at Cape Town, and made interesting observations on the Cape Colony and the Dutch colonists.

The two months that followed, during which the fleet beat laboriously across the ocean to its final destination, were months of even greater wretchedness for the masses of humanity below decks than before.

> Almost immediately on leaving port an epidemic dysentery appeared among the convicts, which very soon made its way among the marines, and prevailed with violence and obstinacy till about Christmas.

No one, it seems, suspected the water taken aboard at Cape Town. Moreover, on December 20 White writes:

> I visited the "Prince of Wales" where I found some of the female convicts with evident symptoms of the scurvy.

Two days later:

> The scurvy began to show itself in the "Charlotte" mostly among those who had the dysentery to a violent degree; but I was pretty well able to keep it under by the liberal use of the essence of malt and some good wine, which ought not to be classed among the most indifferent anti-scorbutics. For the latter we were indebted to the humanity of Lord Sydney and Mr. Nepean.

Soon the end of the long voyage was successfully accomplished, and on January 20 the *Sirius* anchored in Botany Bay. "To see all the ships safe in their destined ports", writes White, "without ever having been by any accident one hour separated, and all the people in as good health as could be expected or hoped for, was a sight truly pleasing at which every heart must rejoice."

On landing in New South Wales, White, like everyone else who sees it for the first time, was impressed greatly by the magnificence of Port Jackson harbour. Reading the following sentence, one should remember that he had but recently had the opportunity of seeing the famous harbour of Rio de Janeiro. He writes:

> Port Jackson I believe to be without exception the finest and most extensive harbour in the universe, and at the same time the most secure, being safe from all the winds that blow. . . . Trincomalé, acknowledged to be one of the best harbours in the world, is by no means to be compared to it. In a word, Port Jackson would afford sufficient and safe anchorage for all the navies of Europe.

White's first task after the landing was concerned with the organization of a hospital. A laboratory and sick tents were first erected near the west shore of Sydney Cove, and were soon filled with patients suffering from the true camp dysentery and the scurvy. The building of the hospital was proceeded with, as the number of the sick rapidly increased. "More pitiable objects were never seen", writes White. "Not a comfort or convenience could be got for them besides the very few we had with us." An attempt was made to grow some vegetables to supply the deficiency in the diet of the sick, but the season was not propitious and the small plants withered. White was continually handicapped in his treatment of the sick by shortage of medical necessaries, and the historical records of the period are dotted with letters to the authorities (mostly ignored) to have more supplies sent out. His exertions on behalf of the sick were always in the face of great discouragement, not only on account of lack of supplies, but because of the shortage of assistance, the ineradicable filth and bestiality of many of the patients, and their depredations upon the belongings and food of other patients weaker than themselves, which fear of punishment could not prevent.

As did Sir Joseph Banks and Dr. Solander, who came with Captain Cook, John White found in this country a naturalist's paradise, and was not slow to join the various expeditions which the Governor made from time to time into the country about Sydney.

On one such expedition in August, 1788, to Broken Bay many interesting observations of the aborigines are recorded. They noticed that all the native women and female children had the little finger of the left hand amputated at the second joint, and White, the surgeon, comments that "the stump was as well covered as if the operation had been performed by a surgeon". One incident on this expedition seems amusing to us, and is quaintly put. White had decorated the head, neck and arms of a native woman with his pocket and neck handkerchiefs, which he tore into ribbons.

> On her continuing to exhibit a number of coquettish airs, and on my having nothing left except the buttons of my coat, on her admiring them I cut them away, and with a piece of string tied them round her waist. Thus ornamented and thus delighted with her new adornments, she turned from me with a look of inexpressible archness.

On these expeditions into the country a large number of new types of wild life, particularly birds, was obtained with the gun. The specimens were preserved and were eventually sent to England. Some are still exhibited in the Museum of the Royal College of Surgeons. From them drawings were taken, from which were made the plates, sixty-five in number, illustrating the "Journal". These drawings are very fair, though many of those of animals and birds seem queer to us who are familiar with the same creatures in real life. Notwithstanding this, in a foreword (advertisement) "the Editor flatters himself" that the engravings by Miss Stone, Mr. Catton and Mr. Nodder are most accurate delineations of the actual specimens. The botanical specimens (drawn by Nodder) are the most life-like.

Descriptions of the natural history specimens form a lengthy appendix to the "Journal" proper, which was of great interest to naturalists, as being the first written accounts of many Australian flora and fauna; and the scientific names proposed for the types described have often been credited to White. It has long been known, and it may be inferred from the appendix, that the descriptions were the work not of White, but of the three scientists mentioned in the editor's foreword—Mr. John Hunter (certain animals), Dr. Smith (botanical articles), and Dr. Shaw (further articles on

fauna with Latin descriptions as well as English and proposed scientific names). It has been suggested that Mr. Thomas Wilson, to whom the "Journal" is dedicated, was the editor: this is confirmed by an interesting copy which is in existence bearing the inscription:

This copy was presented to me by the Editor, Thos. Wilson, Esq. The plates were selected with great care and coloured by the hand of Miss Stone. Signed D. Pitcairn.

The last entry in the "Journal" indicates that the manuscript and the natural history specimens accompanying them were dispatched to England on November 11, 1788. This date is important, for White claims to have been the first to utilize medicinally the astringent gum of eucalyptus, and to discover eucalyptus oil and its therapeutic application; yet on the very same day his assistant, Dennis Considen, writes a letter to Sir Joseph Banks, making the same claim for himself:

If there is any merit in applying these and many other simples to the benefit of the poor wretches here, I certainly claim it, being the first who discovered and recommended them.

It is thus impossible to allot priority. It is perhaps not unlikely that White followed the time-honoured custom of assuming the credit for his subordinate's discovery.

After the conclusion of the "Journal" we know little of the activities of White in New South Wales. He was granted one hundred acres of Crown land on the road to Parramatta. This grant, Hamond Hill Farm, as he called it, was bounded on the north-west side by the road leading to Parramatta, and separated on the south-west side from Johnston's Annandale Farm by a road sixty feet wide. This grant extended from White's Creek on the east to West Street on the west. It was situated between the present Petersham railway station and the Parramatta Road. White's name is perpetuated in White's Creek. There is also a White Bay between Glebe Island and Balmain.

When times became hard and famine stared the settlers in the face, White made no attempt to look on the brighter side, but gave way to the gloomiest pessimism, and heaped execrations on the country and recriminations on those who had sent the expedition, as witness a letter which he wrote to a friend in England on April 17, 1790:

. . . . Much cannot now be done, limited in food and reduced as the people are, who have not had one ounce of fresh animal food since first in the country; a country and place so forbidden and so hateful as only to merit execration and curses; for it has been a source of expence to the mother country, and of evil and misfortune to us, without there ever being the smallest likelihood of its repaying or recompensing either. From what we have already seen, we may conclude that there is not a single article in the whole country that in the nature of things could prove of the smallest use or advantage to the mother country or the commercial world.

In the name of Heaven, what has the Ministry been about? Surely they have quite forgotten or neglected us; otherwise they would have sent to see what had become of us, and to know how we were likely to succeed. However, they must soon know from the heavy bills that will be presented to them, and the misfortunes and losses that have already happened to us, how necessary it becomes to relinquish a scheme that in the nature of things can never answer. It would be wise by the first steps to withdraw the settlement, at least such as are living, or remove them to some other place. . . .

The wood is bad, the soil light, poor, and sandy, nor has it anything to recommend it. . . .

The Supply tender sails to-morrow for Batavia, in hopes the Dutch may be able to send in time to save us. Should any accident happen to her, Lord have mercy upon us!

Tempers were short in this tense atmosphere, and it is recorded that on August 12, 1788, White fired a pistol duel, the first in this country, with his assistant, Balmain, both being slightly wounded. The bitter resentment of these two men for each other never ceased.

Dated December 11, 1792, we have another letter from White, in which he begs Sir A. S. Hamond to use his influence with the Principal Secretary to procure him leave of absence on half pay in order to return and adjust the derangement of his affairs in England due to the failure of his agent. He does not ask for this indulgence on the ground of ill-health, though he says he might well do so, but he grounds his claim on his services. This time the influence of his friend was of little immediate avail; delay followed delay. It was not until late in 1793 that a temporary successor was appointed, and White was tied to the colony in whose progress he had so materially assisted till December 17, 1794, when he sailed for England and home in the *Daedalus*.

It is a matter for regret that the last association of so interesting a figure with the Colony was not a happy one. Early in 1796, White not having returned to New South Wales, Mr. William Balmain, who had taken over his duties, applied for the full salary of principal surgeon. In a letter to Governor Hunter, Balmain asserts that White, who was present when this demand was made by his agents, objected to it, and affirmed that he had at his own expense engaged a person to assist him in his duties as principal surgeon. "I appeal to your excellency", says Balmain, "whether such an affirmation is true, and whether Mr. White in endeavouring to prevent me receiving what in common justice is my due has not artfully cast an unworthy reflection on my ability." We are not clear as to the facts of the case; the outcome, however, was that White was requested to return at once to New South Wales, and on his failing to do so a commission was issued on August 16, 1796, appointing Balmain Surgeon-General to the settlement.

From 1796 to 1800 John White was surgeon in His Majesty's Ship *Royal William*, after which he was for three years surgeon to His Majesty's Dockyard at Sheerness, and for seventeen years surgeon to Chatham Dockyard. In 1820 he retired from active service and thereafter received a pension from the retired list. He was also in receipt of a pension equal to half his salary from the New South Wales Civil List till 1826.

He died at Worthing, Sussex, on February 20, 1832, and lies buried in Saint Mary's Church, Broadwater. But one hundred years after he still lives with us in his "Journal".

Analytical Department.

"HEPASOL."

"Hepasol" for Intramuscular Injection.

"Hepasol" is prepared by Glandular Preparations, Limited, of 65, Macquarie Street, Sydney. It is a concentrated extract of liver to be used for intramuscular injection in cases of pernicious anæmia. It is prepared according to the directions of Cohn, Minot *et alii*, and contains the active principle in a concentration thirty-three times that present in the raw liver. In its preparation it is ultra-filtered, then preserved by the addition of a suitable antiseptic. Two batches have been thoroughly tested for sterility and we have assured ourselves that it contains neither sporing nor non-sporing organisms. It is non-toxic to rabbits and guinea-pigs in large doses, both intramuscularly and intravenously.

Clinical Test.

"Hepasol" has been tested in one case of pernicious anæmia, as follows:

A male, aged fifty years, was suffering from a relapse of pernicious anæmia. (He had been treated on several occasions previously for severe relapses and had latterly been taking liver orally sporadically.) He was first seen in this relapse on December 9, 1932, when he was dyspnœic and was complaining of weakness and numbness of the legs. His blood morphology was as follows:

Red blood cells, per cubic millimetre ..		1,920,000
Hæmoglobin value		43%
Colour index		1·1
Reticulocyte count		3%
Leucocytes, per cubic millimetre		2,300
The differential leucocyte count was:		
Band forms	2%	52%
Neutrophile cells	50%	
Lymphocytes		40%
Monocytes		8%
		100

In stained films the red cells showed severe anisocytosis, moderate poikilocytosis and polychromasia. There were numerous macrocytes and microcytes. The differential leucocyte count was typically that of pernicious anæmia.

On December 13 and 14, 1932, he was given intramuscular injections of ten cubic centimetres of "Hepasol". The injections caused some local soreness, but otherwise did not upset the patient at all. One week after the second injection he was given six cubic centimetres intramuscularly, and thereafter up to date he has received three cubic centimetres intramuscularly at weekly intervals.

Blood counts were done at frequent intervals during the first fortnight, and thereafter at weekly intervals on the day preceding the injection. The results appear in the accompanying table. The reticulocytes rose to 11·6% by the third day and reached a maximum of 27% on the fifth day (see graph).

Date.	'Hepasol' given intramuscularly.	Red Blood Cells per cubic millimetre.	Hæmoglobin Value.	Reticulocytes.	Leucocytes per cubic millimetre.
Dec. 9, 1932		1,920,000	43%	3·0%	2,300
Dec. 13, 1932	10 cc.				
Dec. 14, 1932	10 cc.				
Dec. 15, 1932		1,780,000	49%	11·6%	4,600
Dec. 16, 1932		2,070,000	52%	21·5%	3,800
Dec. 17, 1932		2,220,000	52%	27·0%	
Dec. 19, 1932		2,510,000	55%	12·0%	3,500
Dec. 21, 1932		2,920,000	55%	8·4%	4,500
Dec. 22, 1932	6 cc.				
Dec. 24, 1932		3,620,000	65%	1·7%	4,500
Dec. 28, 1932		3,400,000	62%	5·0%	5,100
Dec. 29, 1932	3 cc.				
Jan. 4, 1933		3,730,000	70%		4,700
Jan. 5, 1933	3 cc.				
Jan. 10, 1933		4,190,000	70%		4,400
Jan. 12, 1933	3 cc.				
Jan. 20, 1933		5,170,000	75%		4,650
Jan. 23, 1933	3 cc.				
Jan. 27, 1933		5,830,000	80%		6,100

An improvement was noticed in the films as early as the fourth day after the first injection. By the seventh day the improvement in the films was very definite. By the ninth day it was difficult to find cells showing anisocytosis or poikilocytosis. By the twenty-third day the films would be considered normal in every way. A differential count on this day gave the following figures:

Band forms	15%	72%
Neutrophile cells	57%	
Lymphocytes		24%
Eosinophile cells		4%
		100

The films were further examined on the thirty-eighth day and the forty-fifth day. On each occasion they appeared normal. The differential count on the forty-fifth day was as follows:

Band forms	7·0%	62·5%
Neutrophile cells	55·5%	
Lymphocytes		31·5%
Monocytes		1·0%
Eosinophile cells		4·0%
Basophile cells		1·0%
		100

In brief, this is a patient whose blood count improved from under 2,000,000 to over 5,000,000 red cells per cubic millimetre in thirty-eight days, during which time he had received as the only form of treatment 38 cubic centimetres of "Hepasol". To put it another way, 38 cubic centimetres of "Hepasol" determined an increase of four million cells per cubic millimetre in forty-five days.

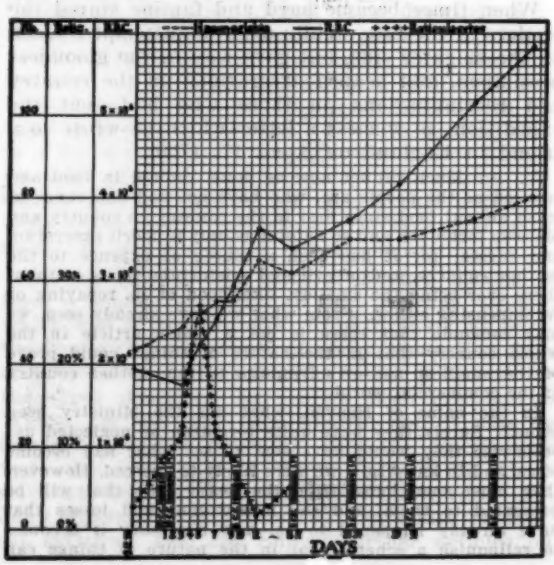
When last seen, on January 27, 1933, the patient was able to undergo considerable exertion without exhaustion, and the weakness and numbness of the legs was ameliorated to a very marked degree. He had gained 5·8 kilograms (thirteen pounds) in weight and had resumed his normal occupation. The patient was treated at home and was ambulant throughout.

"Hepasol" for Oral Use.

"Hepasol" for oral use is prepared similarly to "Hepasol" for injection, and contains the active principle concentrated ten times. It is preserved by alcohol and is not ultrafiltered. It is a potent agent for use when intramuscular injections are contraindicated. It has a palatable taste and should prove of value for maintenance purposes.

Conclusion.

"Hepasol" is a reliable medicament for use in the treatment of pernicious anæmia. It may be given orally or by intramuscular injection.



The Medical Journal of Australia

SATURDAY, FEBRUARY 11, 1933.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

SINUSITIS IN CHILDREN.

In the well-known book of Jackson and Coates, "The Nose, Throat, Ear and Their Diseases", Lewis A. Coffin writes:

> About 1900 I was much perplexed on account of several children who were brought to my clinic suffering from undoubted sinus disease, empyemic in character, and evidently needing operation for relief. My perplexity arose from the fact that there was practically no literature on the disease of the sinuses in children, as well as the vague and divergent statements of anatomists as to the existence, time of appearance, and development of these cavities.

Since 1900 observations have been made on sinusitis in children and much study has been devoted to the anatomy of the sinuses. In spite of this, there is a strange lack of recognition of the liability of children to be affected by sinus disease. It would not be far from the truth to extend this statement and to say that children are often wrongly regarded as being immune to diseases commonly occurring in adults. Sometimes this mistaken attitude leads to immediate disaster, as in appendicitis occurring in the very young; sometimes the effect may be far-reaching. Sinus disease may prove an immediate disaster, and it may have far-reaching effects. Most medical practitioners know that respiratory disorders, such as bronchitis and bronchiectasis, generally follow some infection of the upper respiratory tract, and that of these infections those most likely to be overlooked are infections of the sinuses. To point to respiratory disorder and to recognize its origin in the nasal sinuses may reflect knowledge, but sinusitis should be discovered before it causes disease further afield. There is not the same excuse for medical practitioners at the present time as there was for Coffin in 1900.

The study of the development of the nasal cavity in the fœtus is not a simple matter; this has recently been shown by Livingstone, who constructed a model of the fœtal head to demonstrate the nasal airway and portion of whose report was abstracted in this journal on January 28, 1933. Coffin, in 1904, published an account of his observations on twenty heads. He found that at birth the ethmoidal cells are the only sinuses always present and occupying their permanent position in relation to fixed parts of the head, such as the brain and the eye. The frontal sinus is potentially present in the anterior part of the ethmoidal tract. The antrum is present on the nasal side of the orbit. The sphenoidal sinus may or may not be present in recognizable size. Coffin found that by the middle of childhood the frontal sinus progresses sufficiently to be situated partially on the vertical portion of the frontal bone. The antrum, as the child grows older, develops laterally in an outward direction behind the tooth buds of the permanent teeth, and as they descend it develops anteriorly to occupy the space formerly occupied by them. The position of the antrum is settled during the latter part of the childhood period. The sphenoidal sinus, if not present at birth, develops sufficiently rapidly to be recognized as a sinus by the end of the first or early in the second year. Coffin lays stress on the variation that may occur in these findings. Development may be precocious or it may be tardy. There is thus every reason to expect sinusitis to occur in children of almost any age.

While it might be sufficient to draw attention to the possible occurrence of sinusitis in children, it will be useful to refer to a recent paper by

Valentina P. Wasson, published in the October, 1932, issue of *Archives of Disease in Childhood*. This author reports investigations carried out on seventy-two patients between the ages of three and twelve years who came under her care at Great Ormond Street Hospital, London. Every child who presented symptoms such as persistent cough, recurrent colds with or without a "wheezy chest" and a "running nose" and (most important of all) post-nasal mucopurulent discharge, was regarded as likely to be suffering from sinusitis. X ray examination revealed signs of sinus involvement in thirty-three patients. For further details of this investigation, readers are referred to the original paper. One statement of Wasson needs emphasis: she holds that pus or serum would probably have been obtained from many of the antra of the thirty-nine patients who gave no radiological evidence of sinus involvement. With this most experienced rhinologists will agree. While diagnosis, in the words of Wasson, will depend finally on correlation of clinical manifestations, radiological findings and exploration of sinuses, more attention should be paid to radiological examination. Cross, of Melbourne, and McDowall and Graham Brown, of Brisbane, have shown that with careful adjustment of radiological technique a great deal may be learned about the state of the sinuses. Medical practitioners who have reason to suspect sinus involvement in children will be well advised to have their patients examined by a skilled radiologist.

Current Comment.

OSTEITIS DEFORMANS.

THE increasing use of X rays during the past few years has been the means of showing that certain bone diseases, previously regarded as rarities, are actually not uncommon. This has been a factor in reawakening interest in such diseases as *ostcitis deformans* (Paget's disease) and *osteitis fibrosa cystica* (von Recklinghausen's disease). Numerous improved biochemical methods of importance in the study of these and other diseases of bone have been evolved, and the greater facilities thus provided have further stimulated research. Many advances have been made in the knowledge of the pathology of these diseases and the metabolic disturbances associated with them; clinical diagnosis has been to some extent facilitated; but the ætiology is still undetermined. Some authorities believe that *osteitis deformans* and *osteitis fibrosa cystica* are different manifestations of the same disease or different types of reaction to a common ætiological factor. Knaggs has expressed the opinion that osteomalacia and these two diseases are the same. The following is quoted from his paper, published in 1926:

> If the vitality is good, the resistance opposed to the toxins may ward off harmful effects till the constitutional strength is reduced by age and disease. The reaction under these circumstances is strong, and the resulting affection takes the form of *osteitis deformans*.
>
> On the other hand, if vitality is feeble, the disease appears earlier—in childhood, adolescence, or early manhood. The reaction is fair, but not so vigorous as in *osteitis deformans*. The form the disease assumes is that of *osteitis fibrosa*.
>
> Lastly, when, owing to the severe depression of the patient's vitality, usually by untoward circumstances, the power to react is absent, osteomalacia develops.

The work of Hunter, Snapper and others has gone a long way towards disproving Knaggs's theory. *Osteitis fibrosa cystica* is said to be always associated with disease of one or other parathyreoid body, removal of which effects a cure. Excision of the parathyreoids apparently has no influence on the progress of *osteitis deformans*.

In addition to the calcium and phosphorus in the blood and urine, an enzyme known as phosphatase has recently been closely studied. This enzyme is concerned in the breaking down of phosphoric acid esters, and is believed to be of great importance in the formation of bone. The phosphatase content of the blood varies in different conditions of health and disease. The significance of phosphatase is not yet clearly understood. Possibly a better understanding may help to lead to a clearer knowledge of ætiology, pathology and prognosis in some of the diseases of bone.

T. J. O'Reilly and Joseph Race have recently reported the results of their investigations into *osteitis deformans* made at the Devonshire Hospital for Rheumatic Diseases, Buxton.[1] This is an excellent paper, well illustrated with admirable reproductions of clear skiagraphs, but marred by the expression of several conclusions that are not justified on the evidence given. A study was made of thirty patients admitted to hospital during a period of eighteen months. The youngest patient was forty-six years of age; the earliest approximate age of onset was forty-three years. The observers are unable to express an opinion with regard to sex incidence. They remark that, as family histories are apt to be incomplete, it is difficult to estimate the influence of heredity; they were unable to trace any evidence of family involvement in their series. They believe that the incidence of the disease is considerably higher than is generally supposed; their 30 patients were from a total of 5,000 admitted to hospital. The apparent incidence among patients admitted to other hospitals is on the whole much lower, but would probably not be so low if the disease were specially looked for. It is of interest

[1] *The Quarterly Journal of Medicine*, October, 1932.

to note that during a period of three years only ten cases were recognized at the London Hospital, though 14,100 patients were admitted to medical wards, whereas, during another period at the same hospital, when bone dystrophies were being investigated, there were 31 patients suffering from Paget's disease among 8,000 admitted.

O'Reilly and Race divide their cases into three groups: those in which there were physical signs of *osteitis deformans*; those in which there were symptoms due to *osteitis deformans* but no physical signs; those in which there were neither symptoms nor signs. Presumably clinical physical signs are meant; for in all cases, of course, there was radiographic evidence. An interesting feature brought out by a study of these groups is that the "progress of the disease as measured by the onset of bone deformity is by no means proportional to the duration"; in other words, the rate of advancement varies with the individual.

The radiographic appearances are discussed at length; they can only be briefly mentioned here. There are three bony changes to be observed by X rays. Any one of these may be present alone; the presence of all three gives the classical radiographic appearance.

> Usually the earliest of these changes is a coarsening of the bone appearance due to a decalcification which accentuates the normal bone lines and produces an appearance of simplification of the normal bone structure . . .
>
> The second change, which is usually the characteristic one of the vault of the skull, is a complete loss of the normal sharp texture of the bone and its outline, so that the appearance becomes hazy and looks as though seen through ground glass.
>
> The third change, generally a sequel to one of the preceding, is a deposition of amorphous calcium salts which spreads throughout the bone like a white steamy cloud and, becoming dense, obliterates all detail in the radiograms.

Calcification of arteries was observed in twelve of twenty-eight cases in which a satisfactory search by means of X rays was possible. It appeared to bear no relation to the other findings. O'Reilly and Race suggest that its frequency and intensity may be due to excess of phosphoric esterase (the substrate of phosphatase), "which, although probably unable to initiate, accelerates and intensifies the deposition of calcium salts in degenerating vessels".

Nothing new is contributed to the knowledge of the pathology of *osteitis deformans*. However, a feature that is apt to be overlooked by those who are acquainted only with late cases is worth mentioning. In the early stages the bones are large, soft and vascular. It is during these stages, of course, that deformities occur.

O'Reilly and Race found no great variation from normal in the calcium and phosphorus content of the blood. The quantity of calcium excreted in the urine was in some cases greater, in some less, than normal, in others normal. It is suggested that the greater excretion occurred when the process of decalcification was predominant, diminished excretion occurred when calcification was proceeding at a greater rate than decalcification, and excretion was normal when the two processes were balanced. It might reasonably be assumed that the blood calcium content would be increased when decalcification was proceeding rapidly. The fact that they found no such increase is used by O'Reilly and Race as an argument against the view that *osteitis deformans* and *osteitis fibrosa cystica* are the same disease. *Osteitis fibrosa cystica*, of course, is accompanied by raised blood calcium content and lowered blood phosphorus content.

O'Reilly and Race are unable to come to any conclusion regarding the ætiology. They believe that *osteitis deformans* is a local disease of bone and that it primarily affects the reticular cells of bone. They suggest that it has a relationship with the reticuloendothelioses, and draw an analogy between it and Hodgkin's disease. It is difficult to see how they arrive at these conclusions.

Acting on the assumption that the disease is essentially similar to Hodgkin's disease, O'Reilly and Race administered arsenic in the treatment of four patients. One patient improved considerably during a period of six months.

There are many features of this paper, not mentioned here, which are worthy of study. It should be read by all who have access to it.

DIABETES.

SINCE most reported results of the treatment of diabetics have been obtained in large clinics by physicians of wide experience, it is interesting to read a recent account by R. N. Klemmer[1] of 312 consecutive cases of diabetes treated in an "open" hospital by 47 different medical practitioners, some of whom were not accustomed to treating large numbers of diabetics. The period covered by the observations was eight years. The total mortality was 13·7%. Among 59 diabetics subjected to surgical treatment the mortality was 15·2%; among 253 treated medically it was 13·5%. Several lessons may be learned from the recorded results. Though no difficulty was experienced with so-called mild diabetes, the utmost care is required in dealing with comatose and precomatose patients. Until the acidosis is successfully combated the height of the blood sugar and the glycosuria are useful mainly as guides in the prevention of hypoglycæmia from over-dosage of insulin. Klemmer quotes some cases to show that disastrous results have followed the disregard of acidosis, particularly in surgical cases. He also points out that in the treatment of coma one must be certain that fluids administered actually get into the body of the patient. In one instance the patient was dehydrated and died, although the stomach and colon were distended with fluid; in this case the fluid should have been given by hypodermoclysis or by intravenous injection. A third lesson to be learned from this series is that when diabetic acidosis occurs suddenly in a patient not known to be diabetic, prognosis must be guarded and a search for infection should be made.

[1] *The American Journal of the Medical Sciences*, September 1932.

Abstracts from Current Medical Literature.

MEDICINE.

Neurosyphilis.

H. G. MEHRTENS AND P. S. POUPPIRT (*The American Journal of Syphilis*) describe the results of treatment of 100 patients with neurosyphilis over a period of two years. "Iodobismitol" was administered two to five times a week. Bismuth appeared in the spinal fluid after three doses, it increased in concentration up to the thirteenth dose and then remained constant, no matter how many injections were given. Bismuth was found in the brains of two patients who died. Of thirty-two patients with meningovascular syphilis 21% made complete serological recovery and 78% manifested clinical improvement. Of forty-six tabetics 56% reported definite improvement; 59% diagnosed as suffering from disease of the paretic type manifested improvement. The drug used, sodium iodobismuthite, reaches the nervous system.

The Physical Signs of Bundle Branch Block.

JOHN T. KING AND D. MCEACHERN (*The American Journal of the Medical Sciences*, April, 1932) have reported bundle branch block as occurring in nine of one hundred unselected cases of cardiac disease, all being confirmed electrocardiographically. They assert that it is possible in the majority of instances to recognize these disorders at the bedside. Their conclusions are based on an analysis of fifty clinical cases. Visible reduplication of the apex beat appeared in 84%, palpable reduplication in 80%. The first sound was reduplicated in 56%; two separate systolic murmurs were heard in 12% and a single first sound with a separate murmur in 16%. On these signs a correct diagnosis was made prior to knowledge of the electrocardiogram in 85%; bundle branch block was suspected in 5%. A difference of opinion occurred in four cases. In six cases the presence of bundle branch block was recognized only by electrocardiogram. Examination of cases showing coincident auriculo-ventricular dissociation shows that the auricles are not concerned with the physical signs of bundle block. Presystolic gallop rhythm bears a superficial resemblance to the signs of bundle block, but the first sound or impulse here is truly presystolic.

Circulatory Failure.

J. C. MEAKINS (*Annals of Internal Medicine*, October, 1932) discusses modern muscle physiology and circulatory failure. Cardiac muscle contains a high percentage of glycogen even when that substance is diminished in skeletal muscle, as in diabetes. It has been found impossible to reduce this glycogen content of the heart muscle in animals under normal conditions and with an adequate oxygen supply. Insulin and glucose are necessary for efficient cardiac function; with oxygen these two substances provide glycogen for the heart. The sugar utilization of the heart is increased by insulin, and also by maintaining a high blood sugar concentration. Reduced oxygen supply causes rapid depletion of glycogen in the heart muscle. When the percentage of oxygen in the inspired air falls below seven, cardiac glycogen is reduced rapidly. Above 25,000 to 27,000 feet is a critical level for aviators and mountaineers; at this height the percentage of oxygen is about eight. With anoxæmia there is a rapid accumulation of lactic acid in the muscles and blood, and in the heart muscle this causes exhaustion. In thyreotoxicosis lactic acid accumulates and glycogen diminishes in the heart muscle. In coronary artery disease of any kind, owing to deficient oxygenation, depletion of glycogen in the heart muscle occurs, and this takes place when the oxygen supply to the heart is unsatisfactory from any cause. In carbon monoxide poisoning acute asphyxia by strangulation, in pneumonia, bronchopneumonia, œdema of the lungs and other acute respiratory causes of anoxæmia this occurs. In failing circulation due to heart disease lactic acid increases in the blood and in the heart muscle, with consequent cessation of function. The findings are summarized with the statement that three known conditions may lead to heart failure through defect in cardiac glycogen metabolism. oxygen want, thyreotoxicosis and insulin deficiency.

End-Results of Artificial Pneumothorax Treatment.

EDWARD N. PACKARD (*The Journal of Thoracic Surgery*, August, 1932) has made a study of 105 patients who had had artificial pneumothorax therapy, which had been discontinued for periods of from one to eighteen years. These patients had all been treated at a time when conservatism was the rule in collapse therapy. They had all been observed for many months before the institution of pneumothorax, 79 had disease in the opposite lung, and 73 had cavity formation of varying size. At the time of writing, 81 were alive and 24 dead; of the former, no less than sixty-two were working. The majority of fatal cases occurred within three years of the cessation of treatment, only eight deaths occurring among 56 individuals between the fourth and eighteenth year periods. In about half the cases treatment ended involuntarily by effusion, or by reexpansion or shifting of the collapsed lung, the average length of time being two years. The average length of time in those who abandoned treatment voluntarily was two and a half years. Of 72 patients who resumed work, only ten have relapsed, at a time from three to eleven years after pneumothorax was terminated. In the experience of the author, it is the exception rather than the rule to find reactivity of disease during reexpansion and afterwards, nor did the patients suffer from untoward symptoms, such as dyspnœa or pain. An effective pneumothorax of two years' duration, and a sputum free from tubercle bacilli for at least a year give reasonable assurance, in his opinion, that the lung may be expanded with safety. Further, he maintains that unintentional reexpansion at the end of this period is fraught with no greater danger than a continuance of the treatment for a much longer period. In no patient did pneumothorax persist after the cessation of treatment, and in only four was there marked thoracic deformity. He concludes that a successful collapse with obliteration of cavities will effectually heal the lung in the majority of cases.

The Hæmo-Endocrino-Pathic Syndrome.

RICCITELLI (*Münchener Medizinische Wochenschrift*, October 28, 1932) states that rarely diseases of the hæmopoietic and endocrine systems occur together. He has met the following types: (i) Hæmolytic splenomegalic anæmia, in which several endocrine glands are involved; (ii) myxœdema *plus* severe secondary anæmia; (iii) Banti's disease *plus* Addison's syndrome; (iv) lymphogranuloma *plus* exophthalmic goitre and hypoadrenalism; (v) Addison's disease and suggestive splenic lymphogranuloma; (vi) pernicious anæmia with Addison's syndrome; (vii) subleuchæmic lymphadenoma *plus diabetes insipidus*. The occurrence of these diseases together should be recognized and is strong evidence of the close functional and anatomical association between the hæmopoietic and endocrine systems.

Experiences in Diabetic Therapy.

MEYTHALER AND JACOBI (*Deutsche Medizinische Wochenschrift*, October 7, 1932) state that 426 diabetics have been treated as in-patients in the Bonn University Clinic since 1924. Of these 171 have been lost trace of, and of the remaining 255, 153 are alive and 102 are dead (40% mortality). The causes of death were: diabetic coma (29%), arteriosclerosis (3%), gall-bladder and liver disease (3%), tuberculosis (1%), pneumonia (2%), appendicitis (1%), apoplexy (2%), heart disease (2%), cancer (2%) and unexplained causes 55%. Two hundred and nine patients have been treated as out-patients for the past two years with a mortality of 0·53%. The authors conclude that it is a necessity to establish diabetic out-patient clinics to keep these patients under systematic observation.

Angioneurotic Œdema and Bacterial Hypersensitivity.

S. E. DORST AND E. HOPPHAN (*The Journal of Laboratory and Clinical Medicine*, October, 1932) report three of a series of cases of angioneurotic œdema in which the patients were found to have bacterial hypersensi-

tivity and were successfully treated by desensitization. They feel that the lack of interest in angioneurotic œdema is due to the usually benign character of the condition and to Quincke's meaningless designation of its pathology. In view of the frightful possibility of œdema of the glottis, this attitude is not justified. Most recent discussions place the condition under the ever-enlarging canopy of the term allergy. In other allergic conditions, such as asthma, arthritis, non-ulcerative colitis and certain skin conditions bacterial hypersensitivity may sometimes be demonstrated by intradermal skin tests, and specific desensitization has yielded excellent therapeutic results. In the attempt to demonstrate the rôle of food allergy in the ætiology of angioneurotic œdema by intradermal tests and selective restriction diets, in only two cases did the authors obtain evidence suggesting food sensitization, though in one this led to a striking therapeutic result. In a disappointingly large number, however, they were unable to prove the existence of food allergy and were led to investigate these for bacterial hypersensitivity. From them the cases reported are selected. All three are of the non-hereditary type and the patients have been observed for a period of two years since desensitization, which may be considered the minimal time factor which justifies the drawing of conclusions. The selection of three cases allows of their being reported in considerable detail. They do not exhaust the series. In the first case cultures from the ethmoid region yielded a pure growth of hæmolytic *Staphylococcus albus*. Desensitization was carried out beginning with one minim of vaccine in dilute suspension, increasing slowly to a maximum of four minims. Injections were given every second day and continued for six months. The patient had one mild attack in the first month and none later. The second patient, a white woman, aged forty-five years, had suffered from giant urticaria and angioneurotic œdema for six years. Diet restrictions and "food rests" gave no permanent relief. She had a spastic, tender and distended colon. The predominating organism in the fæcal flora was a strongly hæmolytic *Bacillus coli*. This patient responded to desensitization treatment, though there were mild attacks of urticaria during the first few months, but no major swelling. These ceased after four months. The third patient, a white woman of forty, gave a history of asthma some years prior to the angioneurotic œdema. She had had several gastro-enteric crises associated with the attacks of œdema. She responded very slowly and with several relapses (including an attack of œdema of the glottis, for which she was admitted to hospital) to an autogenous vaccine prepared from the stool. She was finally free from symptoms after twenty months' treatment by vaccine. Immunization and desensitization are two distinct problems. Exaggeration of symptoms may follow large doses of vaccine in other allergic conditions. To large doses the frequent failure of vaccine therapy may be attributed.

Allergy and Infection.

I. S. KAHN AND B. F. STOUT (*The Journal of the American Medical Association*, October 29, 1932) have devised a simple diagnostic technique for establishing the presence of nasal allergy and differentiating between nasal allergy and infection. This is based on the long recognized occurrence of eosinophile cells in the sputum, blood and nasal discharges in cases of hay fever and asthma. To determine the frequency with which such an infiltration could be demonstrated by simple examination of the nasal discharges and the reliability of such examination in establishing the diagnosis of nasal allergy and if possible to differentiate between nasal allergy and infection, 154 patients were examined. The subsequent diagnosis of allergy in 139 cases was confirmed by the report of the typical appearance of the mucosa, by skin tests, when possible, and by the satisfactory response to the usual measures to control allergic manifestations. Some of the patients found to be allergic had originally been intended as controls. In not a single instance classified as clinical allergy or in the intended controls that showed an eosinophilia of 5% or over was it impossible sooner or later to prove the existence of hay fever or vasomotor rhinitis. In fifteen cases (acute or chronic nasal or paranasal infections) pus cells, but no eosinophile cells were found. From the results the authors conclude that a positive eosinophile nasal smear of from 10% to 90% is almost invariably diagnostic of allergic rhinitis and that a positive smear of 4% or over is highly suggestive, while the presence of abundant non-eosinophilic polymorphonuclear leucocytes is practically diagnostic of infection. Allergic and infectious conditions, however, may exist coincidently or at alternate periods and during a period of allergic quiescence in a patient previously proved to be allergic, eosinophilia may not be present. In these cases a positive smear will be obtained at a later date at a subsequent examination. The material for examination is obtained by providing the patient with a small cellophane handkerchief as a substitute for his own, to be used only when the normal desire to blow the nose arises. Material collected in any other way is unreliable. From these smears are made, dried and fixed by heat and stained as for a differential blood count.

Silico-Anthracosis.

W. E. COOKE (*The Practitioner*, October, 1932) discusses silico-anthracosis, an occupational pneumonokoniosis which affects workers in coal mines. Anthracosis was the name suggested by Stratton in 1838 to define the black fibrotic lung of coal miners. Later, ventilation so improved the air of mines that cases of gross anthracosis became fewer and fewer, until at the beginning of the twentieth century the original meaning of the term was forgotten. The lungs of animals (and of man) very rapidly free themselves from coal dust, and Mavrogordato suggests that coal dust may even neutralize the harmful effects of silica. However, the general opinion is that retention of coal dust in any serious degree does not occur, unless the lymphatics of the lungs have been previously damaged by the action of silica; and anthracosis is now looked upon as a form of silicosis. Oliver, in 1909, and Collis, in 1915, emphasized the importance of stone dust in the production of anthracosis. Jousset, Cummins, Sladden and others have shown that the anthracotic lung contains an abnormal amount of silica. Greenhow, in 1869, extracted 30% of silica from the lung ash of a case of collier's phthisis. The lungs in anthracosis show generalized fibrosis, with large areas of anthracotic consolidation. These areas are black and airless and feel like hard rubber. Small nodules, the size of a split pea, are scattered through the remainder of the lung fields. The pleura is thickened and adherent to the chest wall. There is well marked emphysema. In the solid areas anthraco-necrosis may take place, with the formation of ragged cavities, filled with thick black fluid. Histologically the silico-anthracotic nodule shows perivascular lymphatic block, fibrosis and dust cells in thickened interalveolar septa. There are dilated small blood vessels and capillaries in and around the nodule; these vessels may rupture and a cavity is formed, filled with red blood cells, fragments of fibrous tissue and dust cells. Masses of lymphocytes are seen. Black angular particles, measuring up to 85 micra in length, may be seen, surrounded by a golden yellow material. Analyses of the lungs shows a consistently high silica content, 40% to 45% of the lung ash. Cummins and Sladden found a high silica content also in the lungs of miners not known before death to have any pulmonary disability. The onset of symptoms depends on the presence and degree of concentration of silica dust and on the ventilation of the mine. There is a latent period of between fifteen and thirty years before the onset of symptoms. Before symptoms occur, and while no gross signs of lung disease can be detected, radiological examination shows the hilar shadow to be wider than normal, definite fibrosis in the lung fields and a few scattered nodules or small consolidated areas. Fairly extensive anthracosis may exist without any complaint and with an efficient working life. Radiological appearances are varied and there is no agreement among radiologists upon the interpretation of lung shadows. Silico-anthracosis gives many and varied pictures, and is frequently diagnosed as chronic fibroid phthisis *et cetera*.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE SECTION OF OTO-LARYNGOLOGY OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Royal Prince Alfred Hospital, Sydney, on October 26, 1932, DR. A. B. K. WATKINS, the Chairman, in the chair.

Treatment of Œsophageal Cancer.

DR. GARNET HALLORAN read a paper entitled: "Observations on the Treatment of Œsophageal Cancer" (see page 173).

DR. J. G. STEPHENS said that they were indebted to Dr. Halloran, not only for his complete survey of œsophageal cancer, but also for his strenuous efforts over many years in endeavouring to improve treatment techniques in what was probably the most melancholy chapter in medicine.

An œsophageal cancer represented a new growth in a thin-walled muscle tube, usually ulcerated, usually infected, usually advanced. Dr. Halloran had emphasized these points and explained how the great difficulty with any form of radiation treatment was to secure an effective dose to the whole area without perforation. There was, however, one lucky fact, and that was that the majority of œsophageal carcinomata were fairly radio-sensitive, presenting histological structures similar to those of carcinoma of the *cervix uteri*. But the cervix had a thick musculature and, further, it did not matter if, after radiational treatment, the lumen was blocked, whilst this result was very undesirable in the œsophagus. Moreover, the active movements of the œsophagus were greater than in the uterus. This meant an active lymphatic circulation facilitating spread along the mucous membrane.

Radium therapy of a carcinoma of the œsophagus was not without danger, and hence the necessity of certainty in the diagnosis, as Dr. Halloran had stated, not merely by radiography and œsophagoscopy, but by biopsy, unless the mucous membrane was intact. X ray therapy alone, using all refinements of technique, crossfire, compression and saturation methods, offered safe palliation, but nothing more. Radium alone, in the majority of cases, was palliative, but dangerous. Dr. Halloran had mentioned a combined method of treatment, commencing with X rays and following with radium, according to Guisez's technique, which was the only radium technique worth considering. It was significant that of some dozen patients whom he had treated, the only one to survive for three and a half years was a patient whose X ray treatment had been followed by radium. This sequence was important.

The outstanding feature of Guisez's technique was the introduction of radium tubes in a stomach sound of the largest possible diameter. In this way the local necrotic dose in the lumen was reduced and an augmented dose secured at the periphery of the growth. Hence the importance of preliminary X radiation so as to permit the passage of such a large sound. By X rays alone it was possible to excite a fibrinous reaction in the mucous membrane of the œsophagus; but it was unfortunately never possible to deliver by X rays alone a dose which would completely eradicate the tumour. However, it had been found that in all cases with a patent lumen a larger sound could be introduced after X radiation. Guisez employed radium tubes filtered with one-half to one millimetre of platinum and containing 13·3 milligrammes of radium element. As many as three or six of these tubes might be necessary. At the upper and lower limits of the growth smaller tubes containing 6·6 milligrammes of radium were used. The 13·3 milligramme tubes were about two centimetres in length. Dr. Stephens asked those present to notice that these tubes had the same radium content as those used by Regaud in treatment of carcinoma of the *cervix uteri*.

A significant point was the small irradiation time which could be employed. Thus the dose per centimetre of length was 1·5 millicuries destroyed—about 200 milligramme-hours per centimetre of length. This was an exceedingly small dose, equivalent only to about one or two erythema doses, and contrasted strikingly with the much higher doses tolerated by the thick walled cervix. The radium was introduced every one or two days, for a period of two to six hours, and the treatment might extend over ten to fourteen days.

With X rays four fields were best employed, with a daily dose of 200 to 300 *r* on two of the fields. The total dose in each field should reach 1,800 to 3,000 *r*. Saturation techniques or, still better, Coutard's protracted fractional method was desirable. This took about four weeks, and at the conclusion of this course of treatment there was some difficulty in swallowing and an œsophagoscopy revealed a light fibrinous reaction of the mucous membrane. Six to eight weeks later radium could be introduced.

One patient, on whom a technique approximating to the above was used by Dr. Halloran, Dr. Sandes and Dr. Stephens, had survived for nearly four years, although the growth was now beyond control.

In those cases in which it was never possible to introduce a sound into the growth, the treatment must cease after the X radiation. X radiation alone was never dangerous.

Dr. Stephens concluded by saying that he wished once more to emphasize the value of Dr. Halloran's efforts in this difficult field.

DR. R. S. GODSALL said that he wished to thank Dr. Halloran for his courage in bringing this subject up, because it took a lot of courage to record a series of failures. They were always glad to report successes, but to set out and record a series like this called for a tremendous lot of work. Dr. Godsall knew the work that Dr. Halloran had done on these cases, because he had watched him for the last two or three years, fighting the whole way to try to establish some technique, which Dr. Godsall thought he (Dr. Halloran) had now succeeded in mastering. Dr. Godsall was sure that Dr. Halloran's work in this line would help them all tremendously, inasmuch as it showed that intubation was probably the best of a very ghastly lot of treatment, and that intubation must be controlled by X ray findings, and these must be regularly carried out from time to time.

They were fighting all the time. Symptoms were lacking because they did not see these patients until obstruction had occurred. There was no doubt that the conditions were of two or more years' standing before they saw the patients, because he had been lucky enough to see two cases of early carcinoma of the gullet and had watched them for two or three years until the growth encircled the whole of the gullet. One growth started as a small plaque in the gullet, about half way down, and that case lasted for five or six years; this showed that they did not get these cases except in the obstructive period, when they had to deal with an enormous mass of growth, through which it was almost impossible to pass a bougie. If they could persuade the physicians to refer these patients to them earlier, before obstruction supervened, then they might have some hope in treating the cancer when it was within reasonable bounds. They could deal with a cancer one inch long; it was a different matter dealing with a cancer three inches long. Until these were referred to them earlier, he was afraid they were placed in the position of trying to alleviate symptoms.

Concerning metastases, a most interesting patient had been admitted to hospital a few months ago, unconscious and practically moribund; he died next day. He had an enormous secondary carcinoma of one cerebral hemisphere, and the *post mortem* examination did not disclose any primary growth until the gullet was opened. A small epithelioma not larger than a sixpence was discovered; this was of interest because it was very small and there were no symptoms whatever of indigestion.

Dr. Halloran referred to the use of diathermy. He was persuaded to use it on two occasions, once in the Royal Prince Alfred Hospital and once in private practice, and it was certainly a most blood-curdling ceremony. The active electrode, in the shape of a ring on a tapered bougie, was inserted beyond the growth. The current was turned on and the bougie slowly withdrawn. Dr. Godsall had visited the patient next day to see how he was getting

along and he was enjoying the first meal for six months. Dr. Godsall found that he had burnt an enormous mass of growth away, and he thought he had "backed a winner", but the patient died about six months afterwards. Dr. Godsall thought the diathermy bougie really ought to be put into the museum as something belonging to the dark ages.

Dr. Godsall thanked Dr. Halloran again, because he encouraged them to be patient with these hopeless cases; he encouraged them to persevere with them and slightly dilate the œsophagus until they could insert a Souttar's tube. Until Dr. Stephens and his brother workers could give them some hope in the radium or X ray treatment of malignant disease in the œsophagus, the outlook was hopeless, as it was impossible to deal with them surgically.

DR. P. FIASCHI thanked Dr. Halloran. He said that the frequency of malignant disease of the œsophagus, as shown by Dr. Halloran's statistics, made this site of malignant disease one of vital importance to all members of the profession. The information given by Dr. Halloran about the surgical treatment of malignant disease of the œsophagus and about its poor results was depressing. The last series of statistics in a French journal this year showed a mortality of 90%. In 1912, after mastering the successful total unilateral pneumectomy on the dog on either side, under insufflation anæsthesia, with a similar laboratory apparatus as Meltzer used, Dr. Fiaschi had proceeded to see what could be done as regards extirpation of the lower portion of the dog's œsophagus. He had tried the simpler propositions first. First, gastrostomy, subsequently extirpation of the lower two inches of the œsophagus, infolding the cardiac end of the stomach, closing the diaphragm and shutting off the proximal end of the œsophagus. Then he had made attempts to unite a portion of the jejunum drawn up through the œsophageal opening in the diaphragm to the proximal end of the divided œsophagus, first by sutures, secondly by specially made small Murphy's buttons. The first series of dogs all died of a sero-fibrinous pleurisy with effusion due to a leakage of the œsophagus. Dr. Fiaschi's line of attack was transpleural, as Torek, of New York, had not elaborated his posterior thoracic retropleural method, which, Dr. Fiaschi thought, appeared in 1913 or 1914. The best result he obtained was with a big dog, which, after a button anastomosis, lived seven days. In Dr. Fiaschi's opinion the œsophagus was the meanest tissue in the body to deal with surgically. It was infinitely easier to close the main bronchus successfully than the œsophagus. These bad results in young and healthy dogs were not encouraging. He would have had better results probably if the proximal end of the œsophagus had been brought out posteriorly between the ribs and fastened to the skin and left open.

DR. H. SEAWARD MARSH thanked Dr. Halloran for his paper. He thought that Dr. Halloran had made out a very good case for Souttar's tubes. The method, however, required a very great deal of patience. He had treated two cases of malignant disease of the œsophagus with radium.

The first he had treated with an apparatus lent to him by Dr. H. M. Moran. It consisted of a flexible metal rod with an oval chamber at the lower end, which screwed into the rod. This was filled with radium needles. The rod was passed down an œsophagoscope and the chamber was inserted into the lumen of the tumour. It was left *in situ* for twenty-four hours, as the patient would not stand it any longer. The patient died three months later. In the second case Dr. Marsh had used a hollow gum elastic bougie. He made a slit near the end, put in a number of radium needles, fixing them with silk sutures tied round the circumference of the bougie. This was passed down an œsophagoscope and left in three days. Some improvement resulted for a few months.

Radium, in Dr. Marsh's experience, was not of much use in these cases. Judging from Dr. Halloran's cases, it would appear that Souttar's tubes were of great value.

DR. H. KIRKLAND referred to the question of the insertion of radium into the substance of an œsophageal growth and mentioned a case at present under treatment. The growth, a carcinoma, grew from the postero-lateral wall of the cardiac end of the œsophagus and projected into the lumen. As it seemed to be very suitable for radium needles, Dr. Kirkland had had a special long introducer made and by its aid had buried two three milligramme needles in the mass, giving a dosage of 1,008 milligramme-hours, in January, 1932. On examination six weeks later the visible portion of the growth had decreased by half, swallowing had improved, and the patient had put on a stone and a half in weight. Three months later, in June, the growth had increased to its original size and the patient was again given a radium dosage of 1,008 milligramme-hours. On this occasion the growth was exceedingly hard and a good deal of pressure was required to force the needles into the tissue. Up to the present swallowing was moderately good and the patient was about a stone heavier than when originally seen.

This patient would appear to have been definitely relieved by the insertion of radium and made Dr. Kirkland think that a means of inserting radon seeds laterally into a malignant structure would repay the labour. Dr. Kirkland thanked Dr. Halloran for the very interesting paper he had put before the meeting.

DR. A. B. K. WATKINS also thanked Dr. Halloran for his interesting paper. He said that as far as treatment of carcinoma of the œsophagus went, the results were extremely poor. Those who used Souttar's tubes seemed very enthusiastic about them, and certainly some cases well merited their use, but Souttar himself gave the average length of life after they were used as something like five months. Although one would be inclined to use Souttar's tubes because they gave most benefit to the patient, Dr. Watkins did not think one ought to "throw up the sponge" as far as getting permanent results went.

The lower end of the œsophagus was lined with mucosa similar to gastric mucosa, and the adenocarcinoma which arose in this part was a type of carcinoma which was not likely to give any good results under any form of treatment whatever. It was not as likely to respond to the various forms of irradiation as was the squamous type of carcinoma, and it was more likely to metastasize at a distance and was not very radio-sensitive.

Apart from the lower end of the œsophagus, mucous membrane similar to that found in the stomach was often present as small islands of tissue which appeared as rough patches. Here again adenocarcinoma occurred and no form of clinical treatment was likely to effect a cure. The remaining cases, arising as they did from squamous epithelium, were more hopeful, but Dr. Watkins did not think one could expect to produce a cure by radium unless some new way of applying it could be found. If they took the drawing of Dr. Stephens, which was a representative picture of an œsophageal carcinoma, and if one applied radium in the lumen at a spot one centimetre away, a certain effect was produced, but at another spot three centimetres away only one-ninth of that dose could be obtained. So if a curative dose was given at the spot three centimetres away, they would have given nine times that dose at the spot one centimetre away, with serious risks of perforation or injury to adjacent structures.

It had been shown that in cases of squamous carcinoma of the œsophagus metastases were not present at the time of death in more than 60% or 70% of cases, as far as Dr. Watkins could remember. If they had a growth that was still a localized disease at the time of death in such a large number of cases, Dr. Watkins thought one should not be content with a palliative treatment, but should continue "pegging away" until perhaps someone evolved a method giving perhaps even 3% or 5% of permanent cures.

Treatment was rendered more difficult by the absence of any possibility of estimating the volume to be irradiated.

Improvement might come along lines of increased screening, possibly one centimetre of platinum being used instead of one millimetre, combined with an extension of the fractional method over longer doses.

As far as biopsy went, it was very essential to get a decent bite of tissue, for a small bite might possibly lead to an error in diagnosis, with reports of cure of carcinoma in cases which really were not carcinomatous.

Dr. Halloran, in reply, thanked members for their criticism and broad view of the subject. He used to think that syphilis of the gullet was more common until he made it a routine to take a biopsy snipping by direct œsophagoscopy. As shown on the screen that night, in a table, the œsophageal biopsy report in two of three cases giving triple positive Wassermann reactions was squamous epithelioma; the third biopsy report was not stated, showing that cancer and syphilis were merely coincident in two of them.

With regard to post-cricoid cancer, if ever there was a hopeless disease to treat, it was this. But Dr. Halloran directed attention to a case of Hastings in London, who approached the tumour from the sterno-mastoid muscle and laid eight radon tubes (total 22 millicuries) transversely in the prevertebral fascia behind the tumour. The tubes were removed in six days and the tumour completely disappeared after eighteen days; the site only showed by a paleness of the mucosa. Dr. Halloran did not know the ultimate history.

Knowing that the induced radio-reaction, a radio *epithelitis fibrinosa*, could be watched and controlled by the œsophagoscope, Dr. Halloran intended to look for it regularly in future, just as he did in the mucosa of hypopharyngeal cancer after radiation.

They should see what results they could get from endo-œsophageally applied radium and X ray therapy without gastrostomy, before abandoning the patient to operative procedures of higher mortality rate.

Dr. Halloran stressed the need for close cooperation between the various branches interested in this work, and reminded the meeting of the gulf between the apothecaries and surgeons in the early history of medicine, after the junction of the Surgeons and Barbers Company. Their reunion, long after, was followed by consultations on important cases and pointed the way to modern team work.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on December 9, 1932, DR. E. S. MEYERS, the President, in the chair.

ANNUAL REPORT OF COUNCIL.

The annual report of the Council was taken as read and adopted on the motion of Dr. A. H. Marks, seconded by Dr. N. W. Markwell. The report is as follows:

Membership.

The present membership of the Branch is 503. The additions have been: Election of new members, 8; rejoined, 2; paid arrears of subscription, 2; transfers to the Branch, 19. Our losses were: Transfers from the Branch, 13; resignations, 2; default in payment of subscription, 7; deceased, 2.

The Council regrets to record the deaths of Dr. T. Howard Morgan, of Brisbane, and Dr. Herbert Evans, of Townsville, both of whom were members of the Branch for many years.

Meetings.

General.

The annual meeting and nine ordinary meetings were held during the year, including two clinical meetings.

One special general meeting was held in August, when Sir Charles Martin delivered a lecture.

The average attendance at the meetings was 40.

Council.

Twenty ordinary meetings and eight special meetings were held by the Council. The special meetings were held to consider the following subjects: the health services of the State, representation at the centenary meeting of the British Medical Association, and the lodge capitation fee.

The record of attendance of members of the Council was as follows:

	Ordinary.	Special.
Dr. E. S. Meyers* (President and Federal Committee Representative)	18	8
Dr. Alex. P. Murphy (President-Elect)	20	4
Dr. F. A. Hope Michôd (Past-President and Honorary Treasurer)	11	2
Dr. Kenneth Wilson (Honorary Secretary)	18	8
Dr. Ellis Murphy (Assistant Honorary Secretary)	17	6
Dr. Gavin H. Cameron (Chairman of Committees)	19	7
Dr. Neville G. Sutton (Honorary Librarian)	12	3
Dr. M. Graham Sutton (Honorary Curator of Museum)	13	7
Dr. D. Gifford Croll (Federal Committee Representative and Member of Council)	19	7
Dr. Hedley J. Brown (Councillor)	16	4
Dr. B. L. W. Clarke (Councillor)	8	3
Dr. J. Grahame Drew (Councillor)[1]	12	4
Dr. F. W. R. Lukin (Councillor)	14	7
Dr. N. W. Markwell (Councillor)	20	8
Dr. S. F. McDonald (Councillor)	14	2
Dr. Mervyn S. Patterson (Councillor)	19	4
Dr. W. N. Robertson (Councillor)	13	5
Dr. D. E. Trumpy (Councillor)[2]	18	3

Scientific Meetings.

February.—Dr. G. H. Brandis: "Ano Rectal Fistula".

March.—Clinical meeting, combined with the Brisbane Hospital Clinical Society.

April.—Presidential address by Dr. E. S. Meyers: "A Queensland Medical School and Some Other Matters of Interest to the Association".

Paper by Dr. R. Graham Brown and Dr. J. V. Duhig: "The Electrocoagulation of Tonsils: Some Clinical, Pathological and Bacteriological Observations".

May.—Joseph Bancroft Memorial Lecture, delivered by Professor W. A. Osborne, of Melbourne: "The Price of Progress".

July.—Dr. Walter Crosse: "Acute Mastoiditis".

August.—Special meeting, Sir Charles Martin, Adelaide: "Main Features and Progress of the Science of Nutrition During the Last Fifty Years".

Dr. Cyril Shellshear and Dr. Clive Sippe: "Median Pressure and Hypertension Moyenne Solitaire Syndrome: Some New Aspects of Oscillometry".

September.—Jackson Lecture, Dr. Felix Meyer, Melbourne: "An Outline of History of Obstetrics from Primitive Man to Paré".

October.—Clinical meeting, combined with the Mater Misericordiæ Hospital Clinical Society.

November.—Symposium on infantile paralysis:

Dr. S. F. McDonald: "Signs and Symptoms".

Dr. A. E. Paterson: "Serum Treatment".

Dr. Leslie Gibson: "Treatment of the Early Case by Splinting *et cetera*".

Dr. A. V. Meehan: "Treatment of the Late Case, *i.e.*, After Two Years from Onset of Condition".

Dr. J. V. Duhig: "Pathology and Some Aspects of Serum Preparations".

Dr. J. Grahame Drew: "Epidemiology, with Special Reference to the Queensland Epidemic, 1931-1932".

Personnel of committee responsible for the programme of papers: Dr. F. W. R. Lukin, Dr. N. W. Markwell, Dr. Ellis Murphy, and the *ex officio* members of the Council.

A number of the papers were illustrated by lantern slides and many interesting cases and specimens were exhibited.

[1] Dr. J. Grahame Drew—leave of absence granted from September 1 to end of November.

[2] Dr. D. E. Trumpy—leave of absence granted for January and February.

Early in the year, Mr. George Hancox, who had acted as Honorary Lanternist for some time, left Brisbane, and Mr. E. Bagnall was appointed to the position. The services rendered by Mr. Hancox to the Branch were much appreciated.

Royal Australasian College of Surgeons.—Members of the Branch were invited to attend a meeting held on Thursday, August 4, 1932, when a lecture was given by Mr. F. A. Maguire on "Pelvic Repair Operations and Their Anatomical Basis".

Office-Bearers.

Honorary Secretary.—In February last Dr. B. L. W. Clarke tendered his resignation from the position of Honorary Secretary of the Branch, and the Assistant Honorary Secretary, Dr. Kenneth Wilson, was appointed to that office. Dr. Ellis Murphy was appointed Assistant Honorary Secretary.

The Council would like to place on record appreciation of the services rendered to the Branch by Dr. Clarke during his term of office as Honorary Secretary of the Branch for the past three years.

Honorary Treasurer.—Dr. F. A. Hope Michôd was appointed Honorary Treasurer.

Chairman of Committees.—Dr. Gavin Cameron was reelected to the position of Chairman of Committees.

Ethics Committee.

In accordance with the By-Laws, an Ethics Committee was appointed at the last annual meeting of the Branch, the personnel being: Dr. A. H. Marks, Chairman; Dr. J. B. McLean, Honorary Secretary; Dr. G. P. Dixon, Dr. D. A. Cameron and Dr. J. A. Cameron. The President, President-Elect, Honorary Treasurer and Honorary Secretary of the Branch, for the time being, are also *ex officio* members of the Ethics Committee.

This committee was formed for the purpose, *inter alia*, of investigating complaints regarding professional conduct.

Three complaints have been referred to it by the Council during the year, two of which have been dealt with, and the third is under consideration.

Library.

The following new journals have been added to the library: *Archives of Internal Medicine*, *The British Journal of Ophthalmology*, and *The Journal of Laryngology and Otology*. The Eye, Ear, Nose and Throat Section pays the subscriptions for the two last mentioned journals.

Representation.

The Branch was represented as follows during the year:

Council of the British Medical Association: Professor R. J. A. Berry.

Representative Body (centenary meeting of the British Medical Association): Sir John Goodwin. *Delegates*: Dr. A. Breinl and Dr. R. Graham Brown.

Federal Committee: Dr. D. Gifford Croll and Dr. E. S. Meyers.

Australasian Medical Publishing Company, Limited: Dr. D. Gifford Croll.

Queensland Cancer Trust: Dr. B. L. W. Clarke and Dr. M. Graham Sutton.

Association for the Advancement of Science: Dr. R. W. Cilento.

Standards Association of Australia, Queensland State Committee: Dr. W. N. Robertson and Dr. E. O. Marks.

Animal Health Board: Dr. D. Gifford Croll.

Metropolitan Milk Supply (Greater Brisbane), Limited: Dr. S. F. McDonald.

Crippled Children's Society Public Meeting: Dr. S. F. McDonald.

Subcommittees.

Hospital.

Personnel: Dr. S. F. McDonald, Dr. Neville G. Sutton, Dr. W. N. Robertson, Dr. N. W. Markwell, and the *ex officio* members of the Council.

Sixteen meetings were held during the year and, as usual, many matters were dealt with, especially in connexion with various country hospitals.

The hospital problem which is facing the medical profession throughout the world is becoming more acute, and the position in Queensland has been the subject of much consideration.

There is an increasing tendency on the part of hospital boards and committees towards the admission of all classes of the community to public hospitals. The medical officer is expected to give free treatment, medical, surgical and obstetrical, to all patients in the public wards, irrespective of their financial position, and in many hospitals to private ward patients also.

The recommendations of the Royal Commission on Hospitals have been practically ignored. If the hospital authorities could be persuaded to adopt the forms of admission as suggested by the Commission (Appendices numbers 10 and 11) and all patients, or persons responsible for them, were required to sign one of these forms of admission, the matter of classification would be held in check to a great extent and much of the trouble and unfairness would be minimized.

This subject, however, has been laboured *ad nauseam* and it behoves members of the Branch to realize the trend of events.

At the present moment the Council is engaged in negotiating with the Home Secretary, on behalf of members in country centres, on important matters of principle that vitally affect our hospital policy. The authorities in these centres have instituted a hospital system that seriously affects the position of the members concerned. It is hoped that matters will be amicably settled, and in the alternative the Council expects the loyal support of every member of the Branch.

The question of the administration of anæsthetics to hospital patients has also been receiving consideration in view of the fact that it is reported that hospital committees are taking it upon themselves to pass rules forcing the members of the nursing staff to administer anæsthetics to hospital patients, even when there are medical men available.

Legal opinion was obtained on this question as to the responsibility of the operating surgeon and was to the effect that:

> Such doctor would be personally liable in the event of an injury to any patient arising from the negligent administering of an anæsthetic by an unqualified person. The doctor, when in the operating room, has the sole control of the operation and the assistants, and it is he and not the hospital who is liable for any want of care in carrying out an operation. There is no actual provision in the *Medical Act* preventing the administration of an anæsthetic by a nurse, but the fact that she is not qualified to give anæsthetics raises the presumption that she lacks the necessary skill, and therefore that the doctor is negligent in allowing her to assist at the operation in a capacity for which he knows she lacks the necessary skill . . . The duty of the Committee is to use due care and skill in selecting the staff and to provide the necessary medical staff for their hospital, and if it fails in such duty the only remedy is for the Home Secretary to take action . . . In the case of a person unable to pay, who is a definite risk, the doctor must either take the risk or refuse to operate till proper assistance is provided.

Hospital Appointments.—The following resolution was passed by the Federal Committee at its last meeting, held in September:

> That it be a recommendation to the Branches that where the name of a hospital has been placed in the "Important Notice" column of THE MEDICAL JOURNAL OF AUSTRALIA and a settlement has been effected, it shall be a condition of the settlement that the vacancy be re-advertised in the "Medical Appointments Vacant" Column of THE MEDICAL JOURNAL OF AUSTRALIA before any appointment is made.

Brisbane and South Coast Hospitals Board.—The medical profession has now no direct representation on the Brisbane and South Coast Hospitals Board, as the appointment of Dr. W. N. Robertson has been cancelled. A protest against this action was sent to the Premier.

Rules and Ethical.

Personnel: Dr. Hedley Brown, Dr. S. F. McDonald, Dr. W. N. Robertson, Dr. N. W. Markwell and the *ex officio* members of the Council.

Thirteen meetings were held during the year, at which many matters of a personal and general nature received attention.

Amended By-Laws.—The amended By-Laws of the Branch were distributed to members early in the year.

Issue of Circulars or Questionnaires.—The following rule has been approved by the Council:

> No circular or questionnaire on a medical or allied scientific subject may be issued by a member to any patient without it having been first submitted to the Council for approval.

Radio Broadcasting on the Subject of Cancer.—In compliance with a resolution passed at the Third Australian Cancer Conference, a request was received from the Director-General of Health with regard to radio broadcasting on the subject of cancer and requesting the assistance of the Branch. It was resolved that a reply be sent to the effect that the Branch does not approve of radio broadcasting on the subject of cancer, as it feels that any good that might result would be outweighed by the harm that might be done.

Proposed Ear, Nose and Throat School Clinic.—In regard to a request made by the Chief Medical Officer of the Department of Public Instruction inviting members of the Eye, Ear, Nose and Throat Section to give their services in an honorary capacity in connexion with a suggested school clinic, a reply was sent to the effect that the British Medical Association cannot support the scheme, as it disapproves of the establishment of any free ear, nose and throat clinic apart from the facilities existing at the public hospitals.

Suggested Appointment of Honorary Optometrist to State Schools.—A protest was entered to the Minister for Education against the appointment of an honorary optometrist to State schools, on the grounds that an optometrist is not sufficiently qualified to conduct ophthalmological examination of children.

Notification of Births Bill in Areas in Which Baby Clinics are Established.—On the recommendation of the Obstetrical Section, a deputation waited on the Home Secretary, in view of the fact that the Bill contained a clause making it obligatory on the part of the medical practitioners in the centres concerned to notify births within a specified period. The Minister agreed to define more specifically that the onus of notifying be on the midwife, and the medical practitioner is only called upon to notify if he attends a case where no midwife is present.

Australian Inland Mission, Aerial Medical Officer.—As friction had arisen between the Aerial Medical Officer and a medical officer of health, the matter was referred to the Advisory Committee of the Aerial Medical Services, with the result that the following recommendations submitted by the Council of the Branch were adopted:

> 1. That a rule be laid down and firmly adhered to, that where another doctor is present and willing to act, the Aerial Medical Officer should refuse to act, and his refusal should be final.
>
> 2. That hospital appointments (held by the Aerial Medical Officer) should be temporary; that the position should always be open in the hands of medical agents at a salary to be revised from time to time in accordance with the resources of the district; and that the Aerial Medical Officer should firmly withdraw his services within a reasonable time after a *bona fide* application has been received.

Public Health.

Personnel: Dr. D. Gifford Croll, Dr. S. F. McDonald, Dr. N. W. Markwell, Dr. J. Grahame Drew, also the *ex officio* members of the Council. Twelve meetings were held during the year.

Anterior Poliomyelitis Epidemic.—A special committee was appointed to deal with this matter under the direction of the Commissioner of Public Health.

Reorganization of Health Services.—Consideration of the unsatisfactory position of the public health services of the State resulted in an official statement in the daily papers by the Council of the Branch, pointing out the various anomalies existing in the system, especially with regard to the health ordinances of the Brisbane City Council. Subsequently it was proposed that Dr. J. Grahame Drew, State Health Officer, be seconded to the City Health Department to supervise the reorganization, but no finality has yet been reached, and very little, if any, improvement has been made.

Re Federal Health Department—Curtailment of Activities.—The matter of the curtailment of the Commonwealth health services in the State was taken up with the late Premier (the Honourable A. E. Moore), who recommended that representation be made direct to the Federal Government. Acting on this recommendation a letter was sent to the Commonwealth Minister for Health requesting that the Federal Government reconsider its decision regarding the cessation of the participation by the Commonwealth in the control of hookworm, leprosy and other tropical and subtropical diseases in Queensland. A reply was received to the effect that this communication would receive the personal consideration of the Minister.

The Grand Council of Progress Associations and the Australian Sugar Producers' Association, as interested bodies, acted in conjunction with the Branch Council in this matter.

Animal Health Board.—A request was received from the Minister for Agriculture requesting that an honorary liaison officer be appointed by the Branch to act between the British Medical Association and the Department of Agriculture and Stock, so that diseases involving both human beings and animals could be investigated to the fullest extent. Dr. D. Gifford Croll was appointed to this position. A laboratory is now available for any member of the profession who wishes to do research work for which animals are required.

Report on the Investigation of Chronic Nephritis in Queensland Carried Out by the Commonwealth Health Department.—Requests have been made to the Federal Minister for Health for a copy of the full report, but up to date it has not come to hand.

Re Children Being Exposed to Accidents from Detonators and Poisons.—This matter was taken up with the Department of Health and was subsequently referred to the Department of Public Instruction.

Re Treatment of Eye Conditions Among School Children on Behalf of the Department of Public Instruction.—In July last the Minister for Education was interviewed on the matter generally, and agreed that where there is a medical practitioner in the town he should make the examinations and carry out the treatment, when there is continuity of service.

Increased Period of Training for Midwifery Nurses.—An expression of opinion was requested by the Nurses' and Masseurs' Registration Board on the question of extending the period of training to nine months and eighteen months, instead of six months and twelve months for general trained nurses and untrained women respectively. It was pointed out that the other States are adopting the increased periods of training. After having referred the matter to the Obstetrical Section, the Council expressed the opinion that it would be desirable to increase the periods of training as proposed.

Building.

Personnel: Dr. W. N. Robertson, Dr. D. Gifford Croll, Dr. S. F. McDonald, Dr. M. Graham Sutton and the *ex officio* members of the Council.

Seven meetings have been held during the year, at which various matters regarding "Bay View" property and requests made by the tenant received attention.

Parliamentary.

Personnel: Dr. W. N. Robertson and Dr. Hedley J. Brown, together with the *ex officio* members of the Council. No matters were dealt with by this subcommittee during the past year.

Publicity.

Personnel: Dr. D. E. Trumpy, Dr. Mervyn Patterson, Dr. W. N. Robertson and the *ex officio* members of the Council.

In conjunction with the Public Health Subcommittee, the Publicity Subcommittee dealt with the matter of the publication of a statement made by the Council of the Branch in regard to the public health services of the State.

Lodge.

Personnel: Dr. D. Gifford Croll, Dr. F. W. R. Lukin and the *ex officio* members of the Council.

No meetings were held during the year, as lodge matters were dealt with by the Contract Practice Section Committee.

Editorial.

Personnel: Dr. Ellis Murphy and Dr. Neville G. Sutton.

Contract Practice Section.

Inaugurated 1929. Six general and nineteen committee meetings were held. The annual meeting of the Section was held on July 18, 1932, when the following office-bearers were elected: *Chairman*, Dr. J. G. Wagner; *Honorary Secretary and Treasurer*, Dr. M. Elliot-Smith; *Committee*, Dr. A. B. Carvosso, Dr. A. W. St. Ledger, Dr. D. V. Sheil, Dr. Gavin Cameron, Dr. R. E. Douglas, Dr. A. E. Mason, Dr. F. C. Bechtel, Dr. F. W. R. Lukin, Dr. J. G. Avery, Dr. L. P. Winterbotham, Dr. C. E. Tucker.

Re deficiency in payment to metropolitan lodge medical officers, five-sixths of this amount has been repaid and the balance is confidently expected in December.

The minimum capitation fee was reduced as from July 1 to 25s. per member *per annum* for adult males, single female members to be half this amount, junior members two-thirds, and juveniles one quarter of adult male rate.

This is in accordance with the proposed capitation fee formula which has been under consideration for some time, and is a fair and reasonable amount for the present conditions.

The formula has been presented to the Friendly Societies Medical and Hospital Council for their consideration, but we have not yet received their opinion.

The factors considered in arriving at this formula are as follows:

1. Average weekly wage for adult males in Queensland.
2. The unemployment percentage.
3. The relation between these two and the capitation fee as based on the 1929 standard of thirty shillings.

In 1929 the capitation fee was exactly one-third of the effective weekly wage. The effective weekly wage is arrived at by dividing the average wage by the percentage of unemployment. It has been decided that the capitation formula should be for any one year the effective weekly wage divided by three. This figure at the present time produces a capitation fee of twenty-five shillings. The formula has been arrived at under the direction of an expert in economics.

Two conferences have been held during the year between the Committee and the Friendly Societies Medical and Hospital Council, when matters of mutual interest were discussed. We think these conferences, if held from time to time, will prove valuable in reaching a mutual understanding on debatable points.

Several complaints have been received from lodge practitioners and from lodge secretaries, and have been adjudicated upon to the satisfaction of both parties.

Efforts have been made for some satisfactory arrangement for supplying of lists of additions and deletions of members in connexion with medical officers' lists. This matter is still under consideration and we await the reception of our proposals by the Friendly Societies Medical and Hospital Council, which should help to clarify the matter and prevent misunderstanding.

The matter of a lodge medical officer paying the fee for another doctor when called to attend a lodge patient in urgent cases is no nearer solution. This matter has been discussed at conferences and has been the subject of much correspondence, but as yet the lodge representatives fail to see our point of view, that we cannot undertake a twenty-four hour service every day in the year. However, our efforts in this respect are unrelaxed and a satisfactory solution may yet be reached.

Requests have been received for a reduction in the confinement fee, but were not favourably considered by the committee.

In May last it was decided that an annual subscription of five shillings shall be payable by metropolitan members holding lodge appointments, to defray expenses in connexion with the Section.

Various matters brought forward by country members were attended to, on which reports and recommendations were supplied to the Council.

British Medical Association Contract Medical Service, Toowoomba.—A favourable report has been received from the Toowoomba Local Medical Association regarding the progress of the service.

Sections for Special Branches of Medical Knowledge.

Eye, Ear, Nose and Throat Section.

Inaugurated 1924. The following office-bearers were elected at the quarterly meeting held on March 16, 1932: *President*, Dr. Ernest Culpin; *Vice-President*, Dr. Walter Crosse; *Councillor*, Dr. E. O. Marks; *Honorary Secretary and Treasurer*, Dr. F. G. Meade.

Three quarterly meetings and one special meeting have been held throughout the year. There arose during the year the question "whether sectional meetings tended to interfere with the ordinary meetings of the Branch". Members of the Section thought that the interest of the Section required that sectional meetings should continue, and that members would be prepared to contribute papers to the ordinary meetings if required. Cases of special interest were shown and discussed at the meetings held.

Surgical Section.

Inaugurated February, 1927. *President*, Dr. J. Mowbray Thomson; *Honorary Secretary and Treasurer*, Dr. Alan E. Lee; *Committee*, Dr. H. S. McLelland, Dr. E. S. Meyers, Dr. M. Graham Sutton.

The activities of this Section have continued throughout the year. The following papers have been presented to an average attendance of fifteen members: "The Technique of Cholecystectomy", by Dr. A. G. Anderson; "The Technique of Operations for Carcinoma of the Rectum", by Dr. G. H. Brandis; "The Treatment of External Intestinal Fistula", by Dr. Neville Sutton. The Section has also arranged for the exhibition of motion picture films illustrating the technique of selected operations, and excellent films illustrating cholecystectomy and perineal excision of rectum have been exhibited.

Obstetrical Section.

Inaugurated November 15, 1927. The fourth annual meeting was held on February 23, 1932. The retiring President, Dr. J. A. Cameron, was in the chair. The following office-bearers for 1932 were elected: *President*, Dr. L. W. Gall; *President-Elect*, Dr. Kenneth Wilson; *Honorary Treasurer*, Dr. H. S. Waters; *Honorary Secretary*, Dr. L. H. Foote; *Statistical Committee*, Dr. R. J. Nash, Dr. R. G. Quinn.

Four quarterly meetings were held, including the annual meeting, with an average attendance of thirteen members. The following papers were delivered during the year: Dr. J. A. Cameron, Retiring President; Dr. M. H. Elliot-Smith, "Treatment of Eclampsia"; Dr. Donald A. Cameron, "Perineal Repairs"; Dr. C. A. Thelander, "Mutual Rela-

tionship of Surgery and Obstetrics". In addition, statistics of cases reported by members have been arranged and all cases of interest have been discussed at the meetings. In all 2,440 cases have been added to the statistical records since the work was begun.

In reply to the request for an opinion on the subject of extended training for obstetrical nurses, it was recommended to the Council of the British Medical Association, Queensland Branch, by the Executive of the Obstetrical Section, that training should be extended as it has been in southern centres.

A deputation consisting of the executive also waited on the Home Secretary at Parliament House to discuss with him "The Notification of Births Bill".

Medical Section.

Inaugurated June 1, 1928. *President*, Dr. S. F. McDonald; *Honorary Secretary*, Dr. T. H. R. Mathewson.

The activities of the Medical Section have been somewhat restrained during the year. One clinical meeting was held at Rosemount Hospital, when there was an attendance of twenty-six. A number of patients were shown and an interesting discussion followed. A good deal of attention was directed to the question of the apparent variability of the results of the Wassermann test. Two ward visits were conducted by the Section, one at the Brisbane Hospital and one at the Mater Misericordiæ Hospital. The last meeting of the year was held on November 21, when a paper entitled "Hypoglycæmia and Its Clinical Significance" was read by Dr. John Bostock and Dr. Clive Sippe.

Radiological Section.

Inaugurated March, 1930. *Chairman*, Dr. B. L. W. Clarke; *Honorary Secretary*, Dr. J. W. Heaslop. No meetings were held during the year.

Affiliated Local Associations.

Downs and South-Western Medical Association.

President, Dr. A. D. McKenzie; Vice-Presidents, Dr. W. G. Oakeley (Warwick), Dr. R. V. Adamson (Miles), Dr. T. A. Price; *Honorary Treasurer and Secretary*, Dr. J. M. Beale; *Executive Committee*, Dr. Clive Boyce, Dr. H. J. Eizenberg, Dr. G. V. Hickey, Dr. A. W. L. Row.

The annual meeting of the Downs and South-Western Local Medical Association was held on November 12, 1932. The President, Dr. A. D. McKenzie, was in the chair. The President, in his report, stated that no general meetings of the Local Association had been held during the current year. The infantile paralysis epidemic and matters relative to the British Medical Association contract medical service had occupied much of the available time. Full details of the progress of the scheme and of the finance had been submitted to the Council of the Branch by Mr. Wm. Atkinson, organizer, and by the President, Dr. A. D. McKenzie.

The matter or forming a hospital library was referred to the incoming committee. Dr. Clive Boyce was appointed librarian.

Dr. C. E. Corlette (Sydney) was then introduced to the members, and these he entertained in a most instructive manner with X ray photographs of the most troublesome fractures of the lower limbs with their appropriate treatment.

(*Signed*) V. R. WOODHILL,
Honorary Secretary.

Cairns Local Medical Association.

President, Dr. Edward Mansfield; *Honorary Secretary*, Dr. P. S. Clarke. One formal meeting was held during the year ending October 31, 1932. The majority of the members of the local Branch attended at the Cairns District Hospital on June 28, 1932, and were addressed by Dr. L. M. McKillop on the recent developments in cancer research. At the termination of the lecture, the President, Dr. Edward Mansfield, proposed a hearty vote of thanks to Dr. McKillop for his able and interesting discourse.

Regret was expressed by the members that more lecturers on special medical and surgical subjects could not confer a similar favour to that of Dr. L. M. McKillop.

(*Signed*) P. S. CLARKE,
Honorary Secretary.

Rockhampton Local Medical Association.

President, Dr. Paul E. Voss; *Vice-President*, Dr. E. A. North; *Honorary Secretary and Treasurer*, Dr. J. Bruce Gordon. Meetings were held on February 25, 1932, to discuss the lodge capitation fee, and on September 23, 1932, to discuss the position of members in relation to private ward patients in the Rockhampton Hospital.

(*Signed*) J. BRUCE GORDON,
Honorary Secretary.

Central Western Medical Association (Longreach and District).

During the year there have been no meetings held in this area. Several matters dealing with friendly society lodge practice were attended to.

(*Signed*) C. V. WATSON BROWN,
Honorary Secretary.

West Moreton Medical Association.

President, Dr. J. A. Cameron; *Honorary Secretary*, Dr. T. L. Cooney. Several meetings were held during the year to deal with matters in connexion with a reduction of the lodge capitation fee. Discussions took place with representatives of the friendly societies. The capitation fee was fixed at twenty-seven shillings. In order to assist the management fund of the various lodges our Local Association voluntarily decided to accept twenty-six shillings for a period of twelve months.

(*Signed*) T. L. COONEY,
Honorary Secretary.

Townsville Local Medical Association.

Up to date no report has been received, but it is hoped that this Local Medical Association will be resuscitated.

Bundaberg Local Medical Association.

No meetings were held during the year.

(*Signed*) EGMONT SCHMIDT,
Honorary Secretary.

Maryborough Local Medical Association.

No report has been received to date.

Post-Graduate Course, 1932.

Personnel of Committee: Chairman, Dr. S. F. McDonald; Joint Honorary Secretaries, Dr. L. W. N. Gibson and Dr. Neville G. Sutton; Dr. D. A. Cameron, Dr. G. A. C. Douglas, Dr. K. B. Fraser, Dr. Alan E. Lee, Dr. H. S. McLelland, Dr. T. H. R. Mathewson, Dr. E. S. Meyers, Dr. Ellis Murphy, Dr. M. Graham Sutton.

The annual post-graduate course was held during the last week in May. The membership of the course numbered 79, including seven from the country. Very interesting and instructive lecture-demonstrations were given by the visiting lecturers, Dr. J. F. Mackeddie (Melbourne), Dr. C. W. B. Littlejohn (Melbourne), Dr. J. G. Edwards (Sydney), and also by various local members.

The committee is indebted to Dr. Mackeddie for his generous donation of the neurological film which he showed during the course.

This year the committee inaugurated a refresher course, which was held during the last week in August. The course was essentially of a practical nature and very comprehensive, covering almost the whole field of medicine. There was an excellent response from members and most of the demonstrations were well attended. In view of this success, the committee has decided to repeat the course next year and will probably make it an annual one. The membership numbered 34.

Further visits were made by Brisbane lecturers to centres outside the metropolitan area, under the auspices

of the Post-Graduate Committee, and these were greatly appreciated.

Joseph Bancroft Memorial Lecture.

Professor W. A. Osborne, of Melbourne, delivered the Bancroft Memorial Lecture this year on Friday, May 27, 1932, at the Geology Theatre of the University of Queensland. The title of the lecture was "The Price of Progress", and was thoroughly enjoyed by all those present. In addition to the 73 members of the Branch, invitations were also extended to the Board of Faculties of the University and representatives of other interested bodies.

At the conclusion of the lecture the President presented the Joseph Bancroft Memorial Medal to the lecturer.

Jackson Lecture.

The second Jackson Lecture was delivered by Dr. Felix S. Meyer, of Melbourne, on Friday, September 2, 1932. As the character of this lecture is of an historical nature, Dr. Felix Meyer chose for his title "An Outline of the History of Obstetrics from Primitive Man to Paré", and dealt with the subject in a most interesting manner.

Federal Committee.

Two meetings of the Federal Committee of the British Medical Association in Australia were held, one in Melbourne on February 16, 1932, and the other in Sydney on September 1, 1932. Our representatives, Dr. D. Gifford Croll and Dr. E. S. Meyers, attended the first meeting. Dr. Croll was the only representative at the second meeting, Dr. Meyers being unable to attend.

At the September meeting it was decided that the Federal Council be incorporated, so that the final stage of the newly constituted body to take the place of the Federal Committee of Branches has now been reached.

Reports of the proceedings of the meetings were published in the issues of THE MEDICAL JOURNAL OF AUSTRALIA of March 12 and September 17, 1932.

Dr. C. H. E. Lawes was appointed Honorary Secretary of the Federal Committee in March last.

Dr. Robert Henry Todd.

The Council desires to place on record its high appreciation of the valuable services rendered by the late Dr. R. H. Todd as Honorary Secretary of the Federal Committee of the British Medical Association in Australia since the inception of that body.

At a memorial meeting held by the New South Wales Branch in the Robert H. Todd Assembly Hall on February 21, 1932, the President, Dr. E. S. Meyers, represented the Queensland Branch, and Dr. W. N. Robertson was the representative of the Australasian Medical Publishing Company, Limited.

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Balance Sheet as at November 15, 1932.

LIABILITIES.	£ s. d.	£ s. d.
British Medical Association, London—Balance Subscriptions Account	1,293 5 8	
Less Fixed Deposits at English, Scottish and Australian Bank, Limited, Brisbane	1,237 3 8	
		56 2 0
Reserve against Exchange on Remittance of Subscriptions Account Balance at November 15, 1932, to British Medical Association, London		328 0 0
Australasian Medical Publishing Company, Limited		56 17 6
English, Scottish and Australian Bank, Limited, Brisbane—Overdraft, Building Fund Account	1,508 6 0	
Interest accrued to November 15, 1932	17 7 9	
		1,525 13 9
Loans from Members repayable May 15, 1943	5,010 0 0	
Interest accrued to November 15, 1932	126 5 0	
		5,136 5 0
Annual Dinner Account		8 2 0
Council Dinner Account		2 8 7
		£7,113 8 10

ASSETS.	£ s. d.	£ s. d.
B.M.A. Rooms, Adelaide Street, Brisbane: Library, Book Cases, Furniture, Lantern, Typewriter *et cetera*		288 0 0
Museum Specimens		5 0 0
Queensland Medical Land Investment Company, Limited—4,725 Shares of £1 each, paid up to 10s. each, at cost		2,362 10 0
Freehold Property, "Bayview", Wickham Terrace, Brisbane (*less* Depreciation to November 15, 1932, at 5% *per annum*)		3,468 0 0
Furniture in "Bayview" (*less* Depreciation to November 15, 1932, at 10% *per annum*)		306 0 0
Australasian Medical Publishing Company, Limited, Sydney—Two Debentures of £25 each		50 0 0
Unused Stationery Coupons		5 19 0
English, Scottish and Australian Bank, Limited, Brisbane—Credit Balance, General Fund Account		598 10 1
Cash in hand		6 1 0
Accumulation Account		23 8 9
		£7,113 8 10

F. A. HOPE MICHÔD,
Honorary Treasurer.

I have examined the above Balance Sheet and have obtained all the information and explanations I have required. In my opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Association's affairs as at November 15, 1932, according to the best of my information and the explanations given me, and as shown by the books of the Association.

ROY G. GROOM,
Chartered Accountant (Aust.),
Auditor.

Brisbane.
November 21, 1932.

Australasian Medical Congress (British Medical Association.)

Fourth Session.

It has been decided by the Executive Committee of Congress that, owing to the adverse conditions affecting the whole of Australia and New Zealand, which conditions are not likely to show any material improvement by October, 1933, it would not be possible to guarantee the success of a congress held in Perth by that date. The Federal Committee is therefore prepared to accept invitations from Branches in the other States to hold the fourth session in 1933 or early in 1934.

British Medical Association Centenary Meeting, 1932.

The centenary meeting of the Association took place in London in July, 1932, and those privileged to attend

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Statement of Receipts and Payments (General Fund) for Twelve Months Ended November 15, 1932.

RECEIPTS.

	£ s. d.	£ s. d.
November 16, 1931—		
To Cash at English, Scottish and Australian Bank, Limited, Brisbane		651 6 0
„ Cash in hand		4 2 0
November 15, 1932—		
To Subscriptions—		
For remittance to British Medical Association, London	602 8 9	
For remittance to THE MEDICAL JOURNAL OF AUSTRALIA, Sydney	590 12 6	
Queensland Branch Subscriptions	274 1 6	
Organization Fund, Queensland Branch	767 9 9	
		2,234 12 6
„ Subscriptions to Annual Dinner Account		38 10 0
„ Subscriptions to Council Dinner Account		10 10 0
„ Sundry Receipts		5 4 8
„ Australasian Medical Publishing Company, Limited—Interest on Debentures to June 30, 1930		4 17 1
		£2,949 2 3

PAYMENTS.

	£ s. d.	£ s. d.
November 15, 1932—		
By British Medical Association, London — Amounts placed on Fixed Deposit at English, Scottish and Australian Bank, Limited, Brisbane, on account of Subscriptions, 1931 and 1932		618 6 3
„ Australasian Medical Publishing Company, Limited—Payments for THE MEDICAL JOURNAL OF AUSTRALIA, 1931 and 1932		606 16 3
„ Library Expenditure		55 14 5
„ Furniture and Fittings		15 1 6
„ Bancroft Lecture Expenditure		20 2 0
„ Jackson Lecture Expenditure		1 5 0
„ Branch Expenses—		
Office Salaries and Honoraria	400 4 1	
Printing, Stationery and Printing By-Laws	67 18 5	
Electric Light	21 9 11	
Rent	52 0 0	
Cleaning	41 2 0	
Telephone	23 19 9	
Bank Charges £9 1 5		
Less Exchanges refunded 6 5 0		
	2 16 5	
Stamps and Telegrams	65 18 1	
Audit Fees and Accountant's Services to November 15, 1931	12 12 0	
Insurance, Fire and Workers' Unemployment	2 17 8	
Legal Costs *re* By-Laws, Friendly Societies Medical and Hospital Council, Toowoomba Institute *et cetera*	22 1 0	
Renewals and Repairs, Office Furnishings and Balopticon	13 9 11	
Council and General Meeting Expenses, Newspapers and Sundries	34 17 10	
Contribution to Federal Committee	24 18 0	
Expenses of Delegates to Federal Committee	14 6 9	
		800 11 10
„ Expenses in connexion with British Medical Association Contract Medical Service, Toowoomba		180 0 0
„ Annual Dinner Expenditure		38 12 6
„ Council Dinner Expenditure		8 1 5
„ Cash at English, Scottish and Australian Bank, Limited, Brisbane		598 10 1
„ Cash in hand		6 1 0
		£2,949 2 3

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Building Fund Statement of Receipts and Payments for Twelve Months Ended November 15, 1932.

RECEIPTS.	£	s.	d.
November 15, 1932—			
To Rents from "Bayview", Wickham Terrace	243	0	0
„ Queensland Medical Land Investment Company, Limited—Dividend, 12 months ended November 25, 1931	118	2	6
„ English, Scottish and Australian Bank, Limited, Brisbane—Debit Balance	1,508	6	0
	£1,869	8	6

PAYMENTS.	£	s.	d.
November 16, 1931—			
By English, Scottish and Australian Bank, Limited, Brisbane—Debit Balance	1,389	2	0
November 15, 1932—			
By Rates, Land Tax, Insurance and Repairs, "Bayview"	165	6	0
„ Interest	284	10	9
„ Sundry Expenses	30	9	9
	£1,869	8	6

that historical event were indeed fortunate, both from a scientific point of view and from the aspect of the wonderful entertainments provided. It was most unfortunate that this event synchronized with the present financial depression, as many members who had looked forward to attending the centenary meeting were unable to do so.

Our Branch was honoured by the appointment of two Vice-Presidents of Sections, Dr. A. Breinl being appointed as Vice-President of the Section of Tropical Diseases, and Dr. R. Graham Brown was appointed Vice-President of the Oto-Rhino-Laryngological Section.

Sir John Goodwin, K.C.B., C.M.G., D.S.O., acted as the representative of the Branch and, from reports, acquitted himself in a very able manner, speaking from personal experience of Queensland conditions as they affect medical men.

Dr. Breinl and Dr. Graham Brown were appointed delegates. Dr. Graham Brown attended the centenary meeting, but unfortunately Dr. Breinl was unable to do so.

Testimonial to Dr. Alfred Cox.

On July 23, 1932, at the annual general meeting of the British Medical Association, a presentation was made to Dr. Alfred Cox on his retirement from the position of Medical Secretary, which he has held for the past twenty years. The presentation took the form of a portrait of Dr. Cox, which is to be hung in the Association House, London. A "Presentation Book", containing a suitable inscription and the names and addresses of the subscribers, and also a substantial cheque were presented to Dr. Cox. Sixty-eight members of the Branch subscribed to this fund.

Visitors.

In August last Sir Charles Martin, F.R.S., visited Brisbane and kindly gave a lecture to the Branch, of which mention is made under "Scientific Meetings".

Social.

The annual dinner of the Branch was held at Rowe's Banquet Hall on Thursday, May 26. The guests of honour included Professor W. A. Osborne, Dr. J. F. Mackeddie, Dr. C. W. B. Littlejohn, Dr. J. G. Edwards, Dr. A. J. Opie, and Mr. R. L. Wishart.

Prior to the Bancroft Memorial Lecture the President entertained Professor Osborne, visitors from the other States who were in Brisbane for the post-graduate course, and members of the Council at a dinner at the United Service Club on Friday, May 27.

Dr. Felix Meyer and Dr. E. Sandford Jackson were guests of honour at a dinner given by members of the Council at the United Service Club on September 2, prior to the Jackson Lecture.

On Monday, May 23, a dance and bridge party was held at Lennon's Hotel by the Post-Graduate Committee, at which there was a very large attendance of members and their friends, and a most enjoyable evening was spent.

E. S. MEYERS, President.

KENNETH WILSON, Honorary Secretary.

FINANCIAL STATEMENTS.

The Honorary Treasurer presented the financial statements, which were adopted (see pages 201-203) on the motion of Dr. F. A. Hope Michôd, seconded by Dr. D. Gifford Croll.

ELECTION OF OFFICE-BEARERS.

The President announced the result of the election of office-bearers and members of the Council.

President: Dr. Alex. P. Murphy.

President-Elect: Dr. T. A. Price.

Past-President: Dr. E. S. Meyers.

Honorary Secretary: Dr. Kenneth Wilson.

Federal Committee Delegates: Dr. D. Gifford Croll and Dr. E. S. Meyers.

Councillors: Dr. Hedley J. Brown, Dr. Gavin Cameron, Dr. D. Gifford Croll, Dr. J. Grahame Drew, Dr. F. W. R. Lukin, Dr. N. W. Markwell, Dr. Ellis Murphy, Dr. S. F. McDonald, Dr. Mervyn Patterson, Dr. R. G. Quinn, Dr. W. N. Robertson, Dr. Graham Sutton, Dr. Neville Sutton, Dr. D. E. Trumpy.

On the motion of Dr. E. S. Meyers, seconded by Dr. F. A. Hope Michôd, Mr. Roy G. Groom was appointed Auditor.

PRESIDENT'S ADDRESS.

The incoming President, Dr. A. P. Murphy, read his address (see page 171).

INDUCTION OF PRESIDENT.

DR. E. S. MEYERS then inducted the new President, Dr. A. P. Murphy, to the chair.

DR. A. P. MURPHY thanked the members for the honour they had conferred on him. He knew the office was no sinecure and involved the sacrifice of a great deal of time and required tact and discretion. The honour of the Association would be his care, and his efforts would be directed towards preserving it.

Dr. Murphy introduced the President-Elect, Dr. T. A. Price.

VOTE OF THANKS.

Dr. Murphy referred to the work of the Past-President, Dr. E. S. Meyers, who had had a strenuous time while in office and had been fully seized with the responsibilities. He proposed a vote of thanks to Dr. Meyers. This was carried with acclamation.

ETHICS COMMITTEE.

Nominations for the election of members of the Ethics Committee resulted in the following being appointed: Dr. G. P. Dixon, Dr. A. H. Marks, Dr. D. A. Cameron, Dr. J. B. McLean and Dr. J. A. Cameron.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Rothstadt, Leon Eric, M.B., B.S., 1931 (Univ. Melbourne), Melbourne Hospital, Melbourne.

Blaubaum, Rex Vivian, M.B., B.S., 1930 (Univ. Melbourne), McLennan Street, Marnoo.

Loorham, Leo Patrick Lawrence, M.B., B.S., 1929 (Univ. Melbourne), Eye and Ear Hospital, East Melbourne.

Carr, William James, B.A., M.R.C.S., L.R.C.P., 1908 (England), Deep Ghyll, Mornington Road, Frankston.

Correspondence.

FACIAL PARALYSIS FOLLOWING TICK-BITE.

SIR: I have read Dr. Crosslé's letter on the above (THE MEDICAL JOURNAL OF AUSTRALIA, December 17, 1932) and would like to make a few remarks on a subject that has up to the present received scant attention.

It was not until about five years ago that the action of tick venom was understood. From observations made on my own dogs I was able to say definitely that the venom injected by the tick (*Ixodes holocyclus*) has a selective action on the vagus centre.

Almost the first symptom of tick-poisoning is the inability of the child, or of the dog, to swallow any fluid, the reason being, as in diphtheria, that the muscles of deglutition are paralysed. The muscles of the tongue are not affected because they are not supplied by branches of the vagus. The œsophagus, stomach, small intestine and first part of the colon are all supplied by the vagus; but the descending colon is not, and I utilized that fact and fed my dog with nutrient enemata and normal saline; these gave her strength to fight when she was unable to swallow for nine days.

Dr. Crosslé tells us that his patient was two years of age, and when he first saw her she was suffering from facial paralysis on one side. She was well on Friday, and then developed an urticaria which persisted for six hours. Otherwise the child appeared well and had not complained of any pain. She continued well until Monday, when her mother noticed that her face was "twisted".

Dr. Crosslé examined the patient on Monday and found a "bluish mass occupying the lumen of the left external meatus". The doctor dropped ether and alcohol into the ear. Then the report says: "Under anæsthesia the bluish mass was discovered to be a dead tick, with its head adherent to the bony floor of the external meatus". I do not quite understand what "under anæsthesia" means, but the bluish mass was a female tick who had been filling herself with blood so that she might have a reserve of food to make two thousand eggs. I do not think that she was adherent to the bony ficor; what she had done was to drive home her hypostome, which is a piercing rod built on the lines of the "saw" of the saw-fish; and so it is always difficult, on account of the lateral barbs, to pull the tick away from her host. She probably was not dead until Dr. Crosslé killed her with his ether.

And now I come to the interesting question. Why did the child show signs of "facial paralysis"? The venom of the tick has many points in common with the venom of the snake, and as I have pointed out in another place, both are salivary secretions. The venom of a snake may possess a neurotoxin, an anticoagulin, a hæmorrhagin, a thrombase, a hæmolysin, and a digestive ferment; while the venom of the dog tick contains a neurotoxin, an anticoagulin, a digestive ferment and a local anæsthetic(?).

This being so, why should a child bitten by a tick "on the lumen of the left external meatus" develop a localized paralysis, whilst showing no signs of tick-poisoning in other respects? As I have already said while the tick poison has a selective action on the vagus centre it has no selective action on the facial; so the answer, I think, can be supplied from the following facts. Other cases have been recorded where bites in the region, and close to the region, supplied by the facial nerve have been followed by facial paralysis. In a case recorded by Strickland in 1815, a boy aged eleven years was bitten by a tick near the ear. He exhibited the usual symptoms and signs of tick-poisoning, for his muscles were affected and he could not walk without assistance and "his face was crooked on one side". After the tick was removed the face did not recover for ten days. In another case reported by Dr. Ferguson the report says: "The child, aged sixteen months, fell down, and on being picked up was not able to walk; a little later as he was not able to stand, he was put to bed. Next day he had paralysis of the face". This child died at the Coast Hospital and in the scalp a tick was discovered.

Here, then, we have three cases where the facial nerve was affected and in two of these cases there were symptoms of general tick-poisoning, but in the third there were no general symptoms. We must, I think, come to the conclusion that the poison injected by the tick in the region supplied by the facial nerve acts in human beings like an antigen, and can cause a disturbance which increases the permeability of the fine blood vessels and this permits a rapid exudation of serum, and the branches of the facial nerve become involved. But in animals this does not appear to happen, for the tick may attach herself to the dog's eye-lid, yet the eye-lid does not swell. This resembles what takes place when a protein is injected into an animal; there is no apparent local change, but we know that there is a systemic result, the animal having been sensitized. If, then, it was the tick poison that caused the urticaria, why did the child not show other signs indicating general tick-poisoning? The fact is there is some doubt as to when the tick actually injects the big doses of her poison: she does not inject the poison all at once like a snake does, because she has no reservoir. I can prove from my own observations that a dog can be bitten by a tick, or ticks, and can be paralysed in forty-eight hours and can be dead on the fourth day. Other observers say that the tick does not inject the venom until the fourth day after the attachment of the tick when she has taken in much blood. I may, however, state that while urticaria does sometimes show out very soon after a human being has been bitten, that this does not happen with an animal, for the tick, as I have mentioned, may fix herself on the dog's eye-lid and remain there for days, and yet the dog does not brush it off and the eye-lid does not swell or irritate. I therefore suggest that as a human being is seldom conscious of the "bite" of a tick for the first twenty-four hours, it is not improbable that the first venom injected may act as a local anæsthetic; but it acts later on in human beings as an allergic factor and causes urticaria. The venom also contains a body that prevents the blood coagulating, for once Mrs. Tick has got her hypostome rammed home she wants the blood stream to flow, not to clot, so the first venom injected would contain this body.

I consider that when the dog is attacked by the tick he comes into much the same condition as the animal injected with a foreign protein; the first injection of the protein produces an anaphylactic state; but when the tick injects later on, then these later injections may have the effects of the second or third dose of protein when injected into an animal some days after the first injection, and these later injections of the tick venom may cause the death of the dog or of the child. Tick poison never kills an adult, and it would take two or three ticks to kill a dog as big as an Alsatian. Size and age are factors that count in favour of the dog; small size and youth in the dog are factors that favour the tick. In the case of Dr. Crosslé's patient the tick was removed before she had got into her stride so she had probably injected very little venom.

Some animals are not affected by the tick venom. Thus, the bandicoot is the natural host of the dog tick, and either the bandicoot has acquired an immunity against the action of the toxin, the mutual attraction between the poison and the body cell being much smaller than in the case of susceptible animals; or the tick acts like a perfect lady and does not inject any venom into her host. The tick has no

eyes, but I regard a spot on the end of her palps as the means by which she can distinguish between animals.

The paralysis produced may be regarded as an index to the amount of venom injected, and of late I have come to think of tick venom as one that is specially directed against the synapses; consequently when the toxin is at length overcome by the body cells the synapses resume their usual rôle with extraordinary alacrity, and, like the man who thinks he is dying from snake venom, both man and dog suddenly discover that they can get up and walk away. But the paralysis that attacks the facial nerve is not like this, and when the general paralysis of the legs has left, the facial paralysis still remains for some weeks, because of some alteration in the branches of the facial nerve, which, no doubt, is of an inflammatory nature, due to the local allergic action of the venom. In Dr. Crosslé's case the paralysis did not clear up until some weeks had passed, the child showing no other signs of paralysis.

Yours, etc.,

W. J. STEWART MCKAY.

Macquarie Street, Sydney,
December 23, 1932.

THE FUTURE OF MEDICINE AS A PROFESSION.

SIR: The above question is again being raised under different headings in medical journals and generally in pessimistic vein.

Unless the members of the profession shake off their apathy, it seems to me inevitable that just as the profession in England was stampeded in 1912 by Lloyd George, we shall find ourselves banded with nationalization here. Prevention lies entirely in our own hands. It only needs loyalty amongst ourselves, action in place of indifference.

In this connexion I might refer to a scheme of medical attendance assurance that I submitted to the Branch at a meeting in May, 1914. It was well received and referred to the divisions for their consideration. The paper was printed as a "private and confidential" document and circulated amongst members. At the invitation of several of the divisions I attended their meetings. General, and in some cases unanimous, approval was given to the scheme. Then came the war and we had more pressing problems to occupy our minds. The boom of prosperity that followed made everything so rosy in the garden that no one worried and I, having my own particular troubles, let the matter lapse. The sad conditions of practice now, however, have turned my thoughts back to it. I have a stronger belief than ever that some such scheme would frustrate nationalization and be of material benefit to the profession in other ways.

As confirmatory of the soundness of this belief that an association such as I suggested, controlled by its own members, would succeed, I should like to cite the parallel of the N.R.M.A. Insurance Company. This was founded only seven years ago with no capital beyond the £1 each paid by seven members required for incorporation. The nominal capital of £10,000 was only guaranteed and never required. During this short period it has paid over half a million in claims. It has accumulated a cash reserve of between £80,000 and £90,000 and has just bought, for a large sum, one of the best premises in Sydney for its offices. It charges 20% less premium than other companies, many of which have been forced to relinquish this class of business.

The success of such a scheme needs only cohesion, honesty and loyalty of the members of the British Medical Association, on which, in spite of a recent happening, I think one can rely. Should there be any weakening, self-interest would bring recalcitrants into line. Besides cutting the ground from nationalization, the scheme would make the doctor's position more assured and his lot a far happier one. It would greatly strengthen the position and influence of the British Medical Association and would go a long way towards solving, if not entirely solving, another insistent problem, that of the open private hospitals.

I have now drifted into a quiet backwater of life, but would gladly give any assistance or cooperation that I could in furtherance of the scheme. Anyone interested can see a reprint of the paper at the office of the New South Wales Branch of the British Medical Association. Insurance men whom I have consulted have endorsed the soundness of the plan and laymen have assured me they would gladly welcome it. And so they should, for they would be assured of medical attendance free from all anxiety and trouble about big doctors' bills for a premium that would be surprisingly low. As for the doctor, he would be assured of his full fees in any case, paid promptly and regularly. He would have no bad debts or complicated bookkeeping, amongst minor benefits. The time is ripe. The opportunity should not be missed.

Yours, etc.,

F. ANTILL POCKLEY.

Wahroonga,
New South Wales.
January 14, 1933.

THE PREVALENCE OF MALARIA.

SIR: In the Halford Oration I referred to the estimate of Sir Stephen Tallents of the prevalence of malaria on the globe, namely, 650 million cases with two million deaths annually. Surprise having been expressed, I wrote to Sir Stephen Tallents, who kindly referred the matter to Sir Walter Fletcher, of the Medical Research Council, London, who has courteously forwarded me the information set out as follows:

> Sir Stephen Tallents, of the Empire Marketing Board, has asked me to write to you about the figures he gave to indicate the importance of the malaria problem. He based his figures upon information I obtained for him, and I am very glad to tell you upon what I relied.
>
> The late Sir Andrew Balfour, Director of the London School of Hygiene and Tropical Medicine, compiled statistics from all the available sources, and satisfied himself that the annual death rate from malaria for the whole world cannot be less than two million. The death rate from malaria, ascertained in regions where it is endemic, is from three to four deaths per thousand cases, and Balfour calculated that there must be over six hundred and fifty millions suffering from malaria in greater or less degree, or roughly one-third of the human race.
>
> Reports collected by the International Health Board of the Rockefeller Foundation show that the incidence of malaria in tropical regions appears to be increasing rather than diminishing. Dr. Barber, for instance, found that in Nigeria the parasite rates among adults as well as among children are found to be higher than they were thirty years ago. The ascertained parasite rate there for infants under one year is over 90%. That is in spite of large sums of money spent in the last two decades on the anti-malarial measures at present available.
>
> Colonel James, F.R.S. (late I.M.S.), now in the Ministry of Health here, has made calculations based upon the known quantities of quinine used by different countries. Allowing 200 grains as a fair average for the treatment of one case, it appears that about 47 million cases of malaria are treated annually in the world, about seven and a quarter millions in the British Empire, and over five and a half millions in British India. The annual expenditure on quinine in the world is about £2,500,000, in the British Empire £370,000, and in India £288,000.
>
> I shall be grateful for any information that you may have obtained from your own studies in this subject.

I sympathize with those who are trying to control this agent of destruction. From what I saw in Palestine I realize both the complexity and difficulty of the problem.

Yours, etc.,

JAMES W. BARRETT.

103-105, Collins Street,
Melbourne, C.1.
December 28, 1932.

Proceedings of the Australian Medical Boards.

VICTORIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Act*, 1928, of Victoria, as duly qualified medical practitioners:

Barrett, Edward Harvey, M.B., B.S., 1932 (Univ. Melbourne), Laibert, Orrong Road, Armadale.

Bolton, John Henderson, M.B., B.S., 1932 (Univ. Melbourne), 400, Wattletree Road, East Malvern, S.E.5.

Hasker, William Edward, M.B., B.S., 1929 (Univ. Melbourne), Winyeh Street, East Malvern, S.E.5.

Additional diploma:

Fitzpatrick, David Imrie, F.R.C.S. (England), 1930.

Diary for the Month.

FEB. 14.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 21.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 22.—Victorian Branch, B.M.A.: Council.
FEB. 23.—South Australian Branch, B.M.A.: Branch.
FEB. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.
MAR. 1.—Western Australian Branch, B.M.A.: Council.
MAR. 1.—Victorian Branch, B.M.A.: Branch.
MAR. 2.—South Australian Branch, B.M.A.: Council.
MAR. 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
MAR. 7.—New South Wales Branch, B.M.A.: Ethics Committee.

Medical Appointments.

Dr. G. A. Wright (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for the Insane and Receiving House, Royal Park, pursuant to the provisions of the *Lunacy Act*, 1928, Victoria.

* * *

Dr. R. M. Crookston (B.M.A.) has been appointed Government Medical Officer at Camden, New South Wales.

* * *

Dr. R. B. Wade (B.M.A.) has been appointed President of the New South Wales Medical Board, in pursuance of the provisions of section 3 (3) of the *Medical Practitioners Act*, 1912.

* * *

Dr. H. Rogerson (B.M.A.) has been appointed a Medical Superintendent in the Lunacy Department, Hospitals for the Insane, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought etc., see "Advertiser", pages xvi, xvii and xix.

ALFRED HOSPITAL, MELBOURNE, VICTORIA: Honorary Physician to In-Patients.

BRISBANE MATER CHILDREN'S HOSPITAL, QUEENSLAND: House Physician, House Surgeon.

CHILDREN'S HOSPITAL (INCORPORATED), PERTH, WESTERN AUSTRALIA: Junior Resident Medical Officers.

FREMANTLE HOSPITAL, FREMANTLE, WESTERN AUSTRALIA: Resident Medical Officers.

HOBART PUBLIC HOSPITAL, TASMANIA: Junior Resident Medical Officer.

NEWCASTLE HOSPITAL, NEWCASTLE, NEW SOUTH WALES: Junior Resident Medical Officer.

ROCKHAMPTON HOSPITALS BOARD, ROCKHAMPTON, QUEENSLAND: Medical Superintendent.

ROYAL HOSPITAL FOR WOMEN, SYDNEY, NEW SOUTH WALES: Resident Medical Officer.

THE BENEVOLENT SOCIETY OF NEW SOUTH WALES: Honorary Officers.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associated Friendly Societies' Medical Institute. Mount Isa Mines. Toowoomba Associated Friendly Societies' Medical Institute. Chillagoe Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their agreement to the Council before signing. Lower Burdekin District Hospital, Ayr.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor", THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad *per annum* payable in advance.